Architecture
PORTFOLIO

Thaddeus Chu

Selected Works
2019-2025

Thaddeus Chu

About Me

Hi, I am an architectural designer committed to designing medium-to-large scale projects that promotes sustainable urban living. My internship experience across diverse project types has sharpened my technical and design skills, and I am eager to contribute creativity and expertise to create forward-thinking projects with your team.

Contact

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Email: thaddeuswhchu@gmail.com
LinkedIn: linkedin.com/in/thaddeuschu

Skills

Drafting: Revit, AutoCAD
Modelling: Rhino, Grasshopper, SketchUp, Blender
Visualization: Enscape, Photoshop, Illustrator, InDesign, Krea AI
Physical: 3D Print, Laser Cut
Coordination: BlueBeam

Education

Master of Architecture
University of Toronto
Graduated in 2025

Bachelor of Science in Architectural Studies
City University of Hong Kong
Graduated in 2021

Competitions

Finalist (Architecture) | 4th Inspireli Awards
2019

Merit Prize | Greater Bay Area Southeast Asian Universities Association Bamboo Construction Competition
2018

Other Experience

Revit Workshop Teaching Assistant | University of Toronto
Summer 2024

Taught tutorial sessions and demonstrated Revit modelling techniques to fellow students.

Professional Experience

Architectural Designer — Current
North Office Architects

Produced rendering and working drawings for coordination and permit application.

Architectural Design Intern — Jul 2022- Nov 2022
P&T Architects & Engineers Ltd.

Coordinated with the team and produced working drawings for interior design package. Designed parking floor lift lobby entrance.

Architectural Intern — Jun 2021- Jun 2022
Wong & Ouyang (HK) Ltd.

Produced detailed plans, sections and elevations in Revit for building submissions. Coordinated with the interior designer and produced working drawings for tender package to communicate design intent.

Student Intern — May 2019- Aug 2019
KLS Partnership (HK) Co. Ltd.

Updated Revit model and produced drawings to communicate design intent for the facade mockup. Produced renderings and graphics for parking floors.

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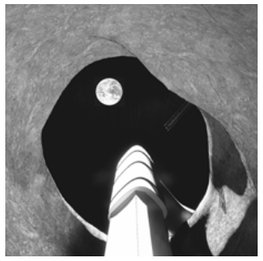

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01

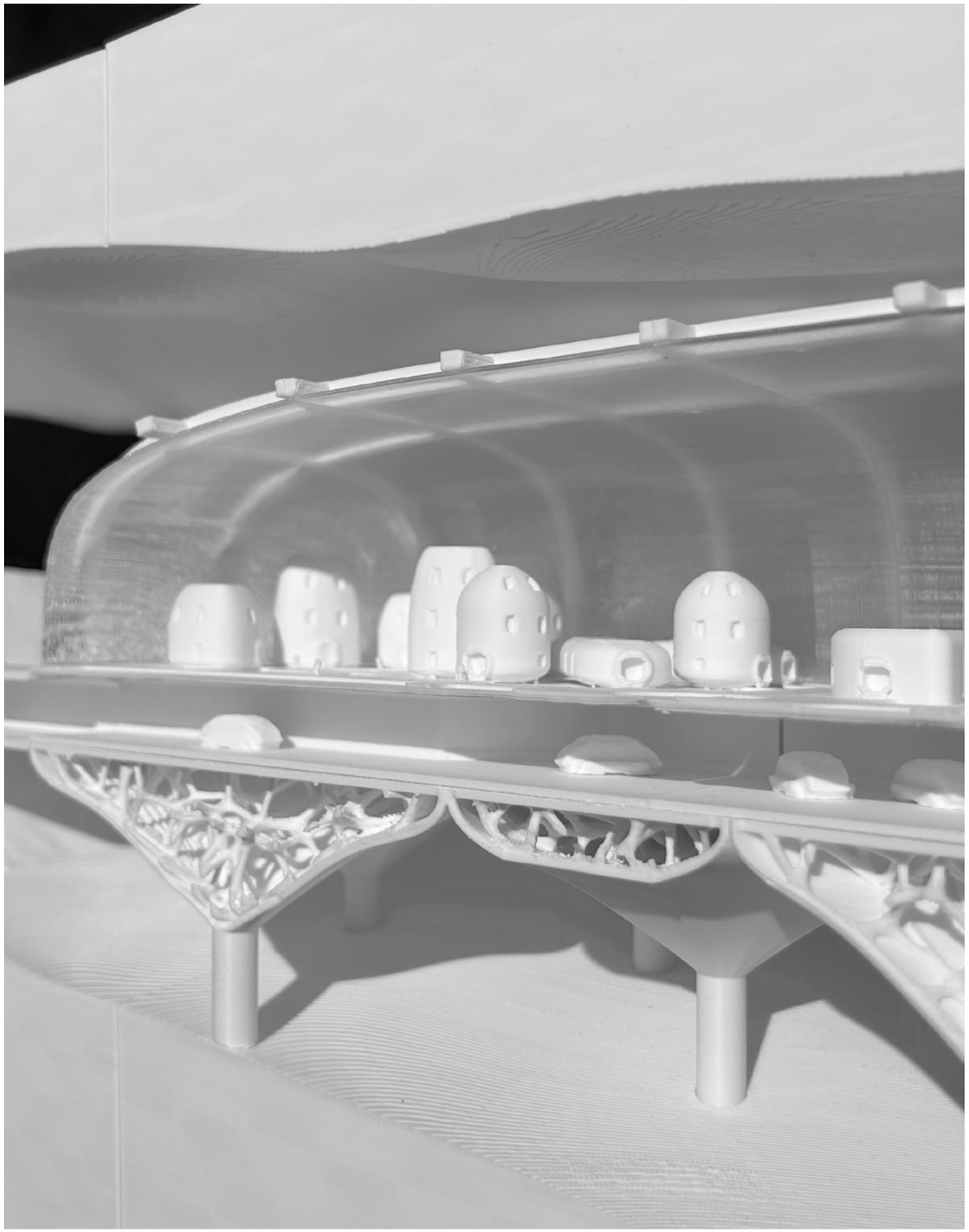
Lunar Lava Tube City

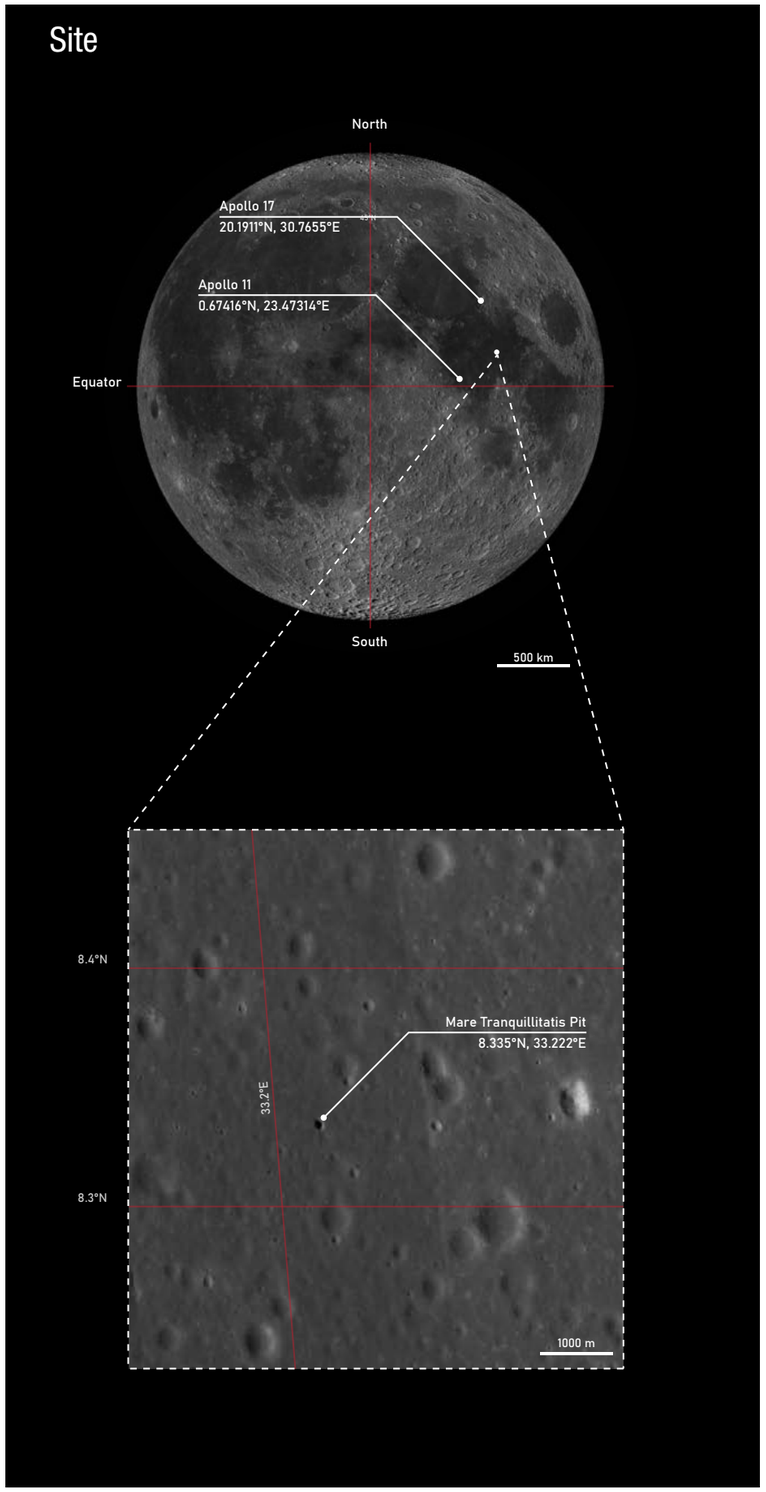
Subterranean Lunar Base Master Plan

M.Arch Thesis
Location: The Moon
Software: Revit, Rhino, Grasshopper, Enscape, Blender, Illustrator, Photoshop

To ensure the long-term survival of our species, we must prepare for the possibility of living beyond Earth. NASA's Artemis campaign aims to return humans to the Moon and ultimately establish a permanent lunar base. The Moon serves as an ideal testing ground for scientific discovery, space technology advancement, and learning how to live and work on another world, as NASA also prepares for future human missions to Mars. However, creating permanent settlements on the Moon remains a formidable challenge due to its hostile environment.

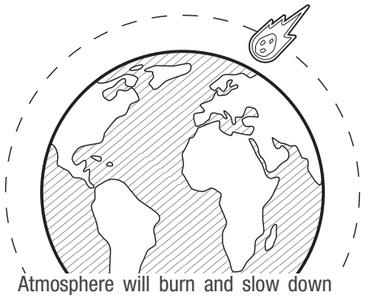
This project envisions a lunar city sited inside a lava tube - a subterranean structure formed by ancient volcanic activity that provides favorable environmental conditions for establishing a permanent lunar habitat. The development of the Lunar Lava Tube City would occur in phases: the initial phase would allow crews to investigate, conduct research, and expand the settlement. Gradually, additional equipment would arrive to support on-site manufacturing, resource extraction, and construction. Eventually, the project would evolve into a thriving city - a permanent lunar base for science, exploration, even tourism.



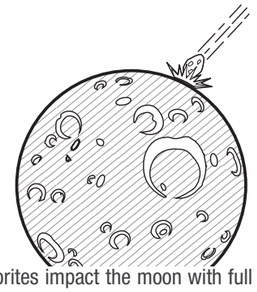


Benefits of Lava Tube

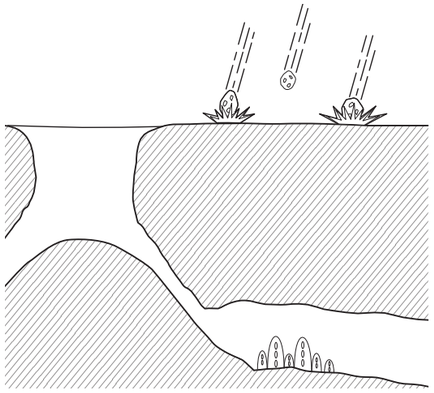
Meteorites



Atmosphere will burn and slow down meteorites.

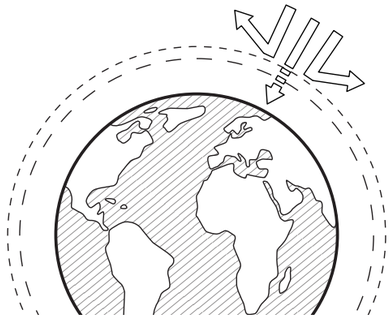


Meteorites impact the moon with full velocity due to thin atmosphere on the moon.

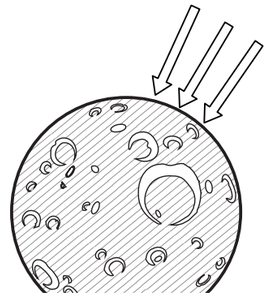


Thick regolith roof provide natural protection from meteorites.

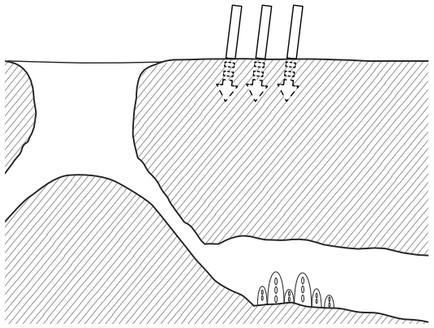
Radiation



Atmosphere and Magnetosphere shielded most cosmic radiation.

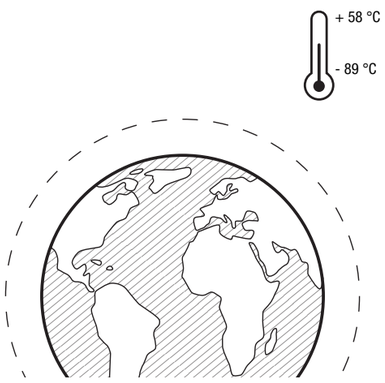


Cosmic radiation reach moon surface directly.

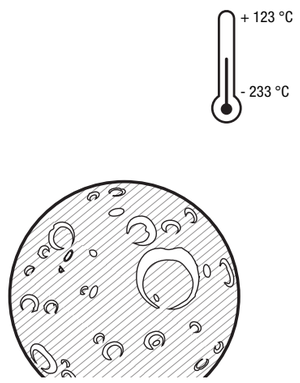


Regolith roof shield against cosmic radiation.

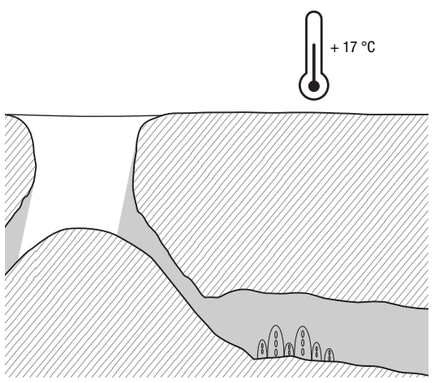
Temperature



Atmosphere keeps relatively habitable temperature on Earth.

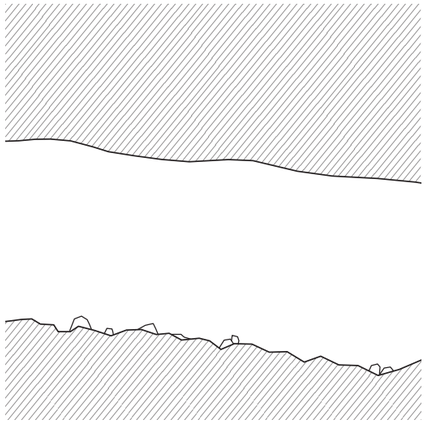


Long lunar day and thin atmosphere leads to huge temperature difference.

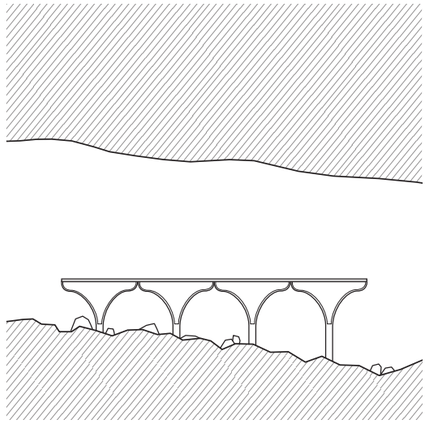


Shaded locations maintains comfortable temperature varying by less than 1°C over an entire lunar day.

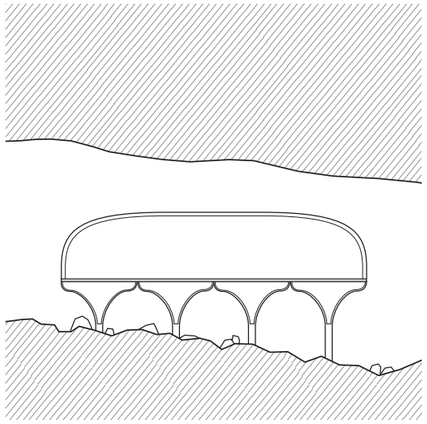
Concept Diagram



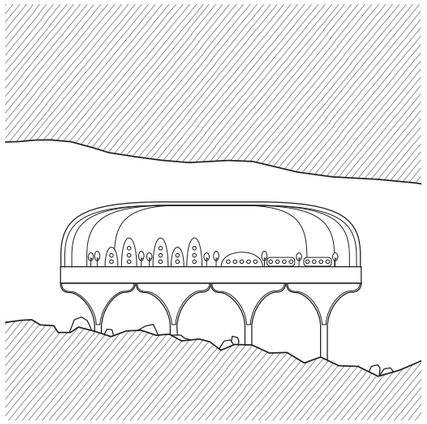
1. Context
The floor of the lunar lava tube is uneven and full of huge debris.



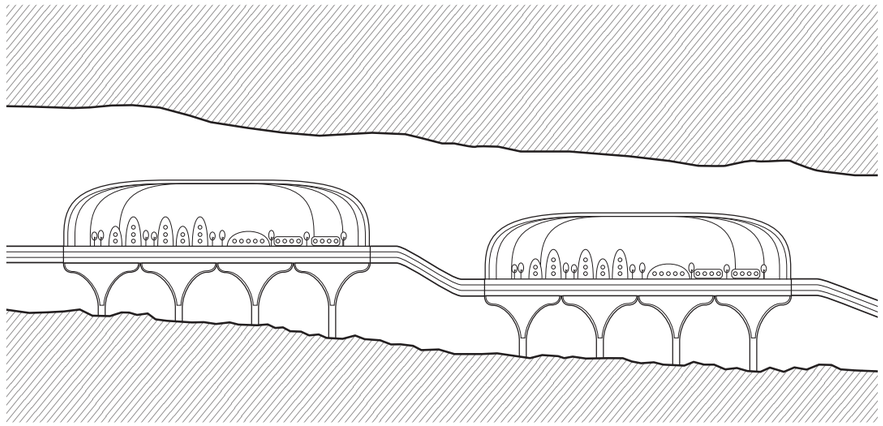
2. Platforms
Create elevated platforms for the construction of the lava tube habitat.



3. Pressurized Vessel
The vessel creates a protected and large volume space for the habitat.

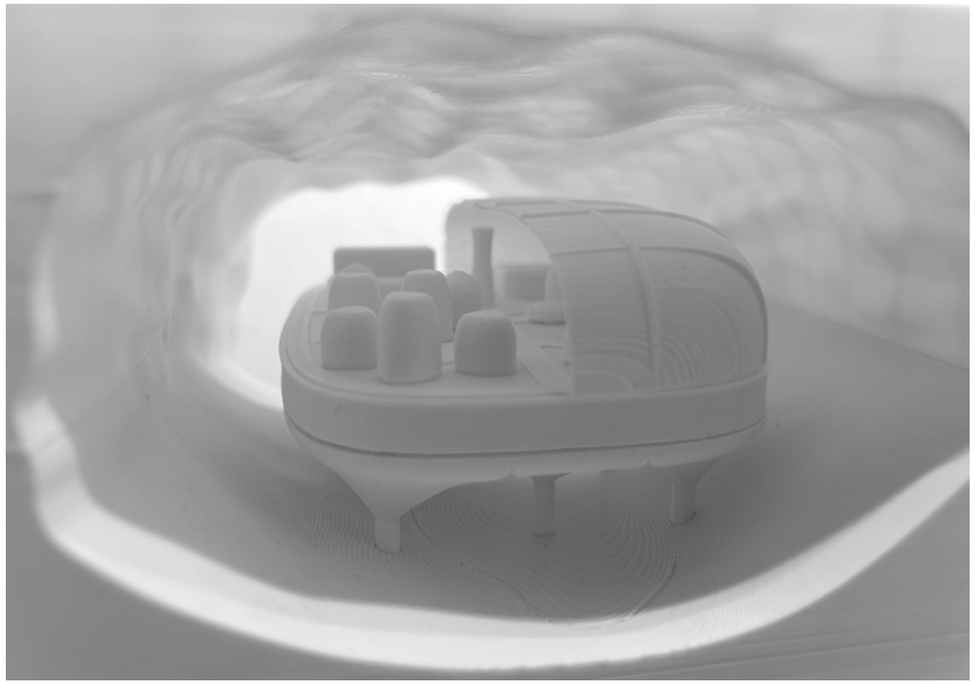


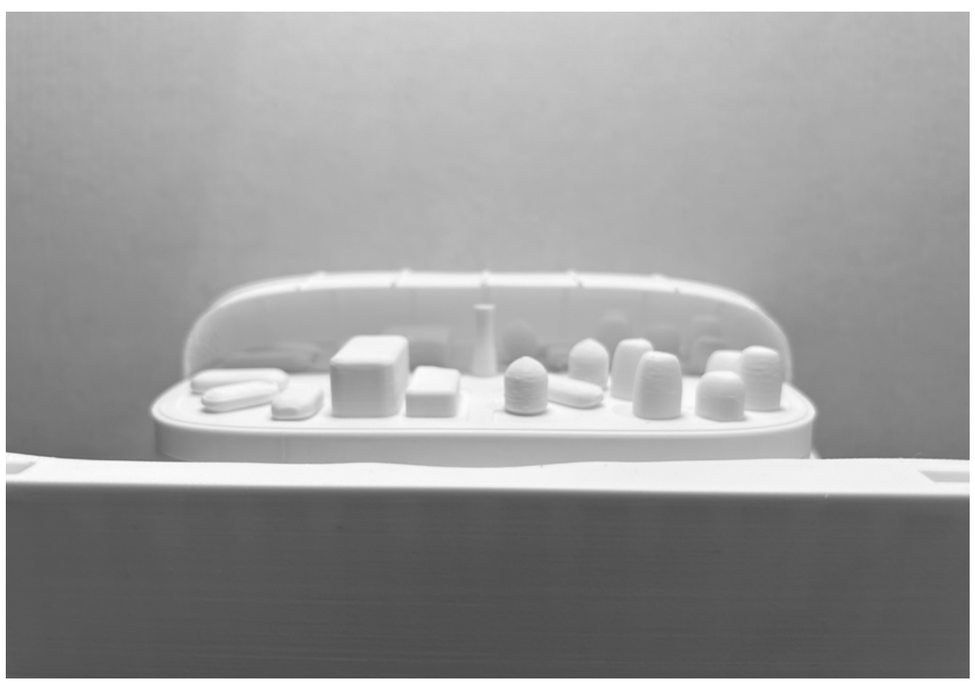
4. Habs
The habitat modules will be 3D printed using regolith collected on site.

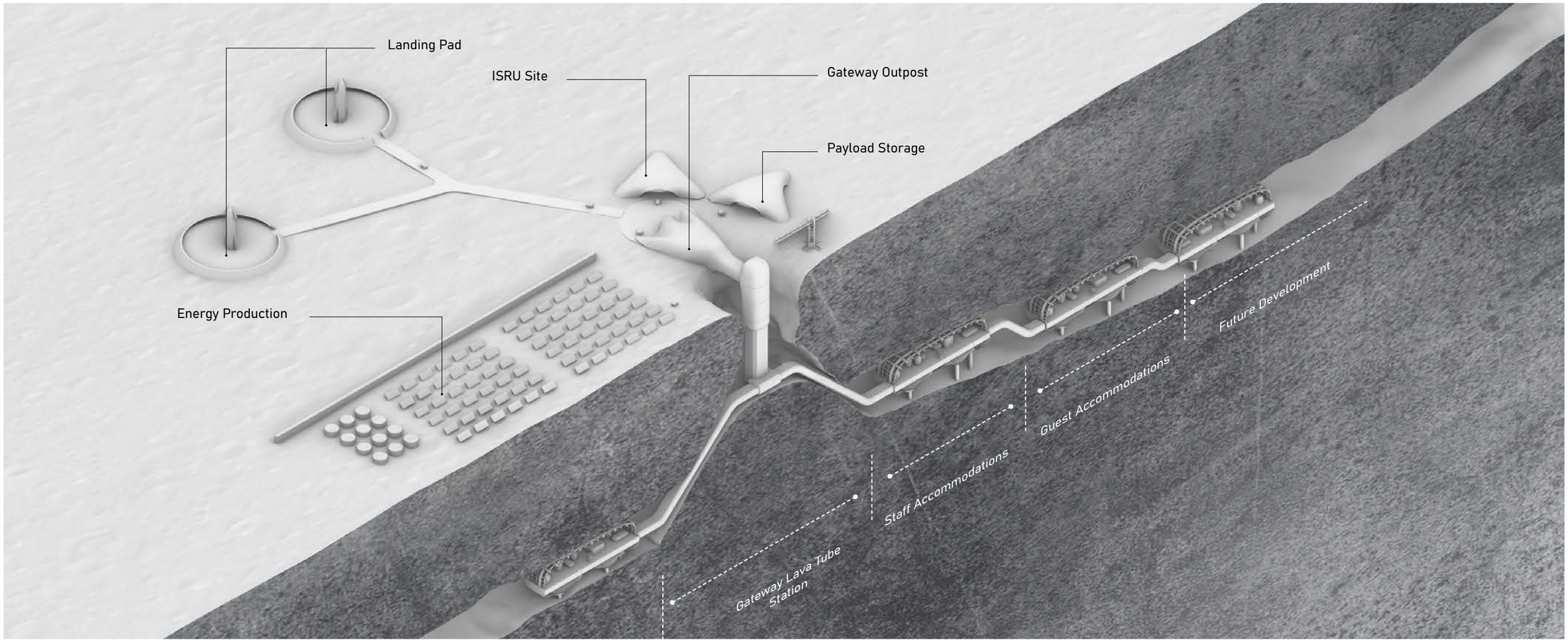


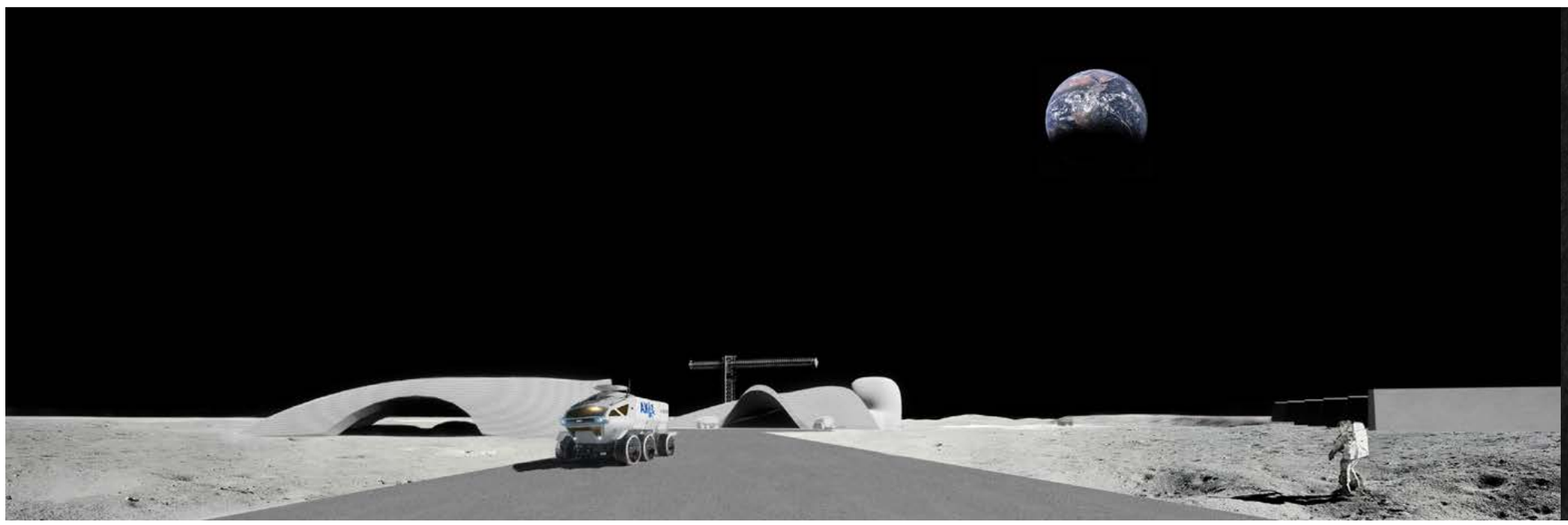
5. Transport Infrastructure
The vessels will be connected by a subway system.

Study Model

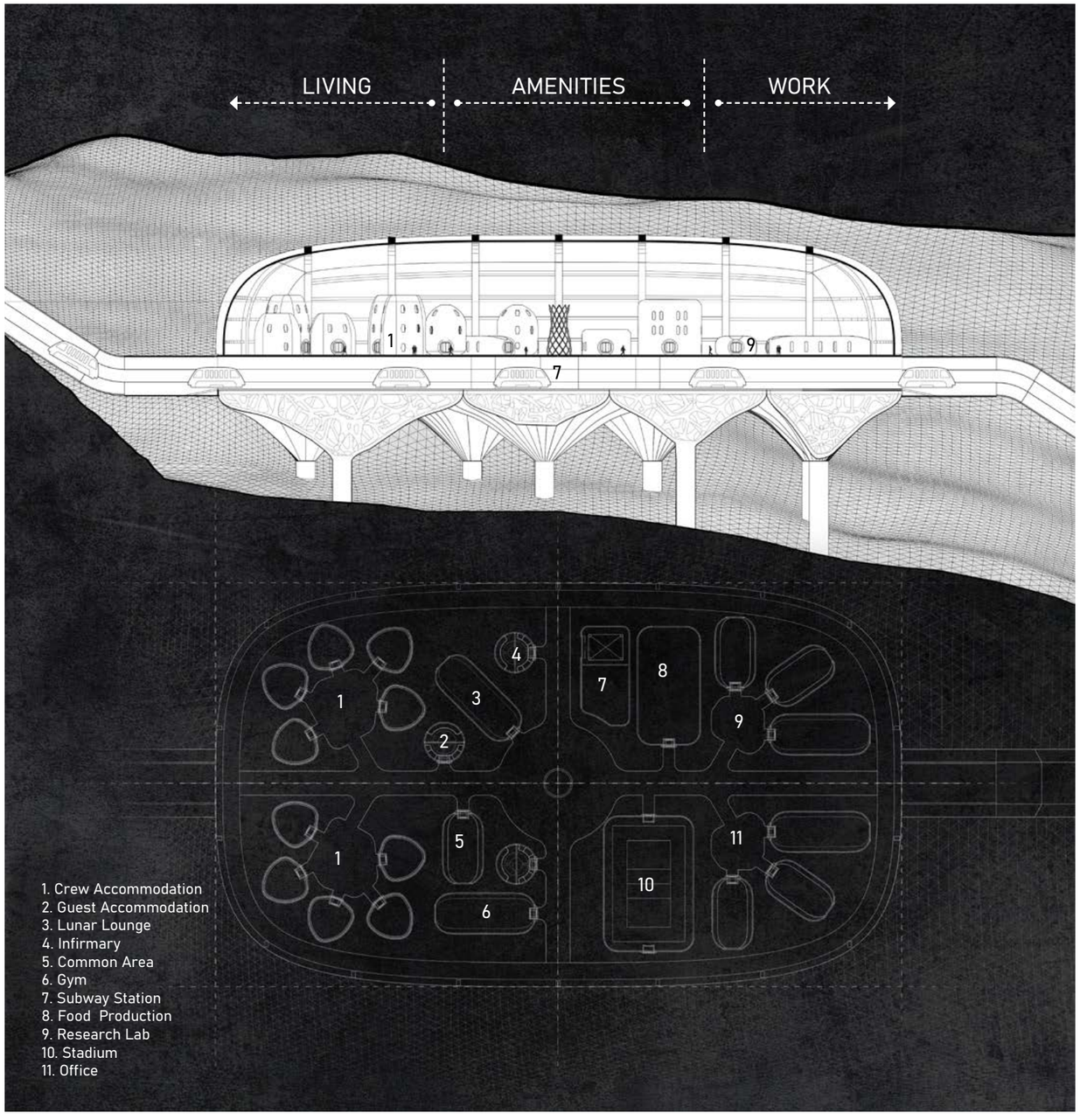




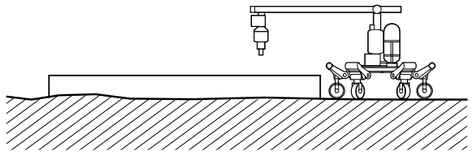

Landing Pad
ISRU Site
Gateway Outpost
Payload Storage
Energy Production
Future Development
Guest Accommodations
Staff Accommodations
Gateway Lava Tube Station



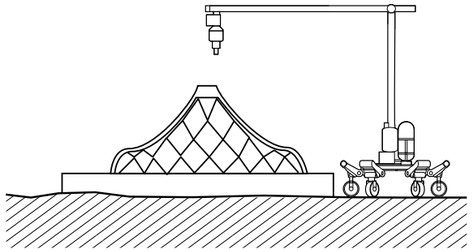
Section & Plan



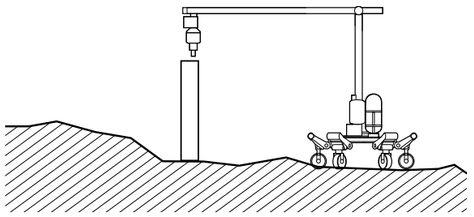
3D Printing



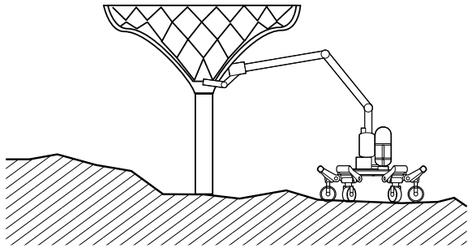
Flatten the printing site.



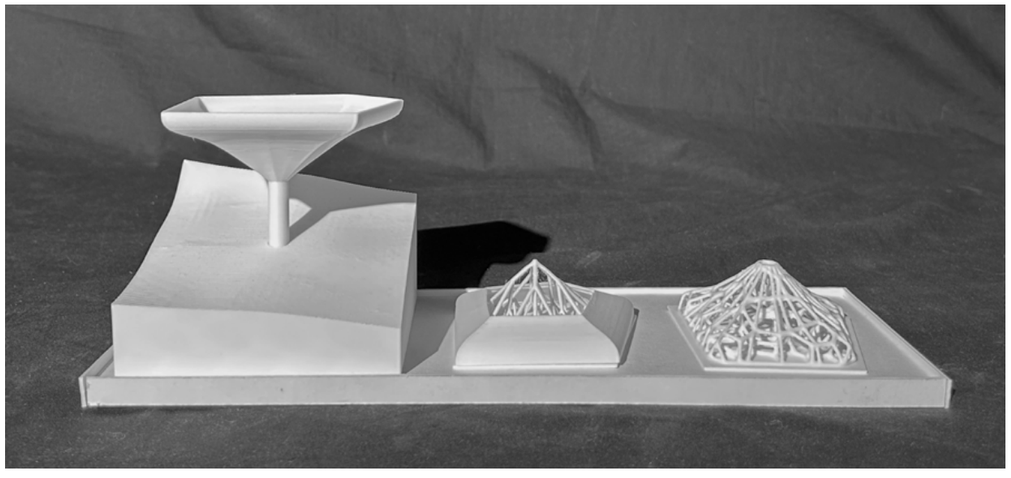
The platform base will be 3D printed using lunarcrete. Lattice structure is incorporated to reduce material and weight while provides strength.



3D printing the column on site.



The light weight property of lattice structure allows the platform to be lifted and installed on the column printed on site.



Circadian Lighting Screen

- Sky simulation screen that replicates Earth's day and night cycles using circadian lighting, aligned with Earth time, to support the well-being of staff and guests.

Lunar Garden

- Diverse plant species preserved from Earth.
- Provides aesthetic beauty and contributes to the mental well-being of inhabitants.
- Improves air quality by adding freshness and enriching the environment with oxygen.

02

The Seamless Shift

Mid-rise Mass Timber Affordable Housing

M.Arch Studio
Location: Toronto
Collaborator: Erela Chan
Software: Revit, AutoCAD, Enscape, Illustrator, Photoshop

Located in the heart of the Glen Park neighborhood, this mass timber housing project introduces 250 new affordable rental units to Toronto. A key design challenge was creating a sensitive transition between the surrounding single-family homes and the proposed 10-storey multi-residential building on underutilized Toronto District School Board land. The staggered building massing mediates the shift in scale and responds to the surrounding context, while the articulated façade establishes a dialogue with the existing urban fabric, integrating the project seamlessly into its setting.

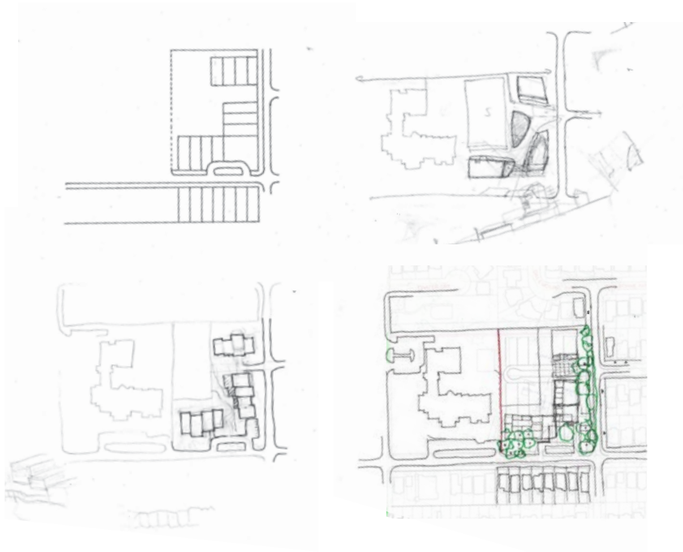
This project is envisioned as a social hub that strengthens neighborhood interaction. At the ground level, a community center accommodates flexible gathering spaces for events and activities, while retail and cafés activate the streetscape and enhance pedestrian experience. At the upper levels, strategic voids are carved into the residential blocks, aggregating individual balconies into generous communal terraces. These shared spaces foster social interaction among residents and create a dynamic vertical neighborhood.

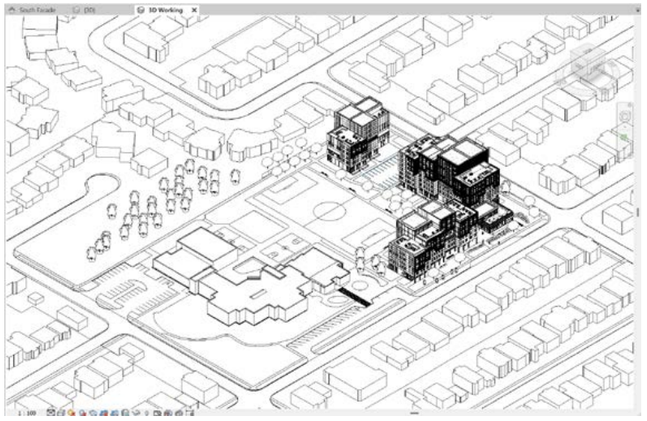
Process

In this project, we leveraged Revit to develop the design as if working in a real architectural firm, preparing ourselves for professional practice. We were able to work simultaneously on different part of the project and coordinate efficiently as a team.

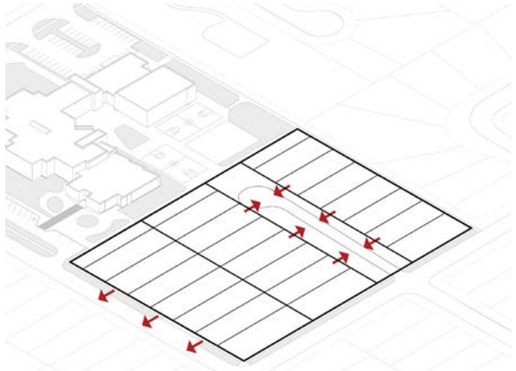
I was primarily responsible for resolving the building layouts and producing visual graphics, while my teammate focused on façade design and physical modelling. We worked closely throughout the process, collaborating on conceptual development and the building façade.

Our continuous discussions and shared decision-making allowed us to integrate our strengths and create a cohesive design outcome.

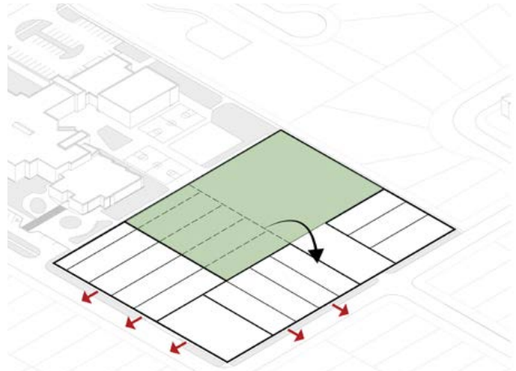




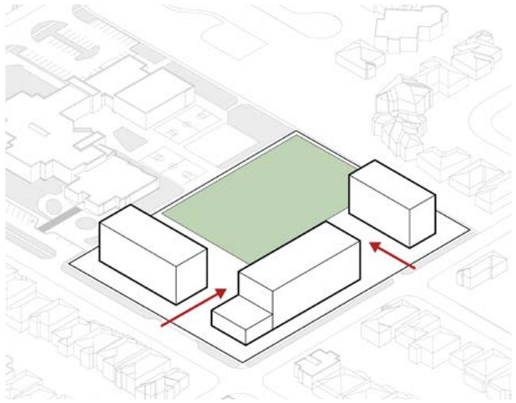
Design Strategy



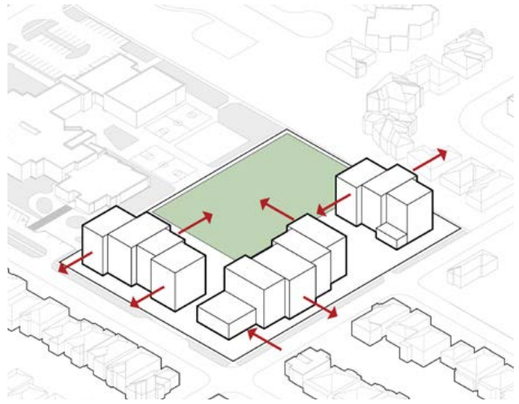
1. Overlaying traditional property line according to site fabric.



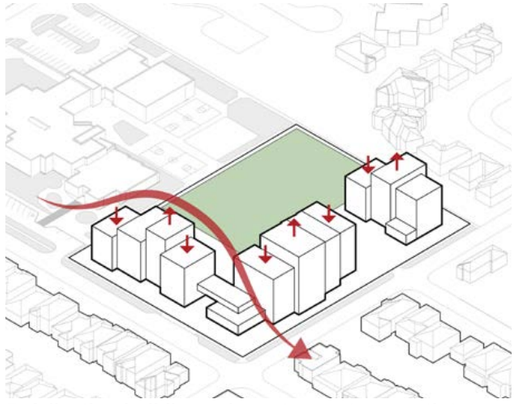
2. Modifying the grid to create open space.



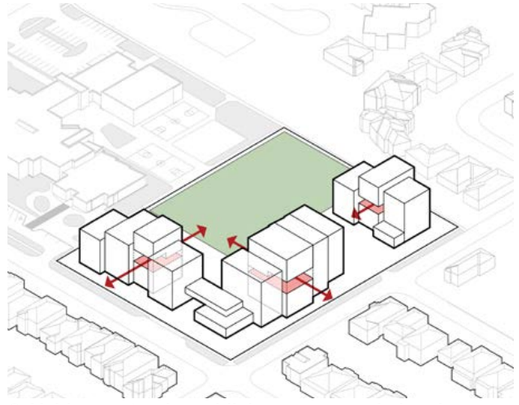
3. Create access to the open space.



4. Shifting the massing to response to the staggered streetscape.

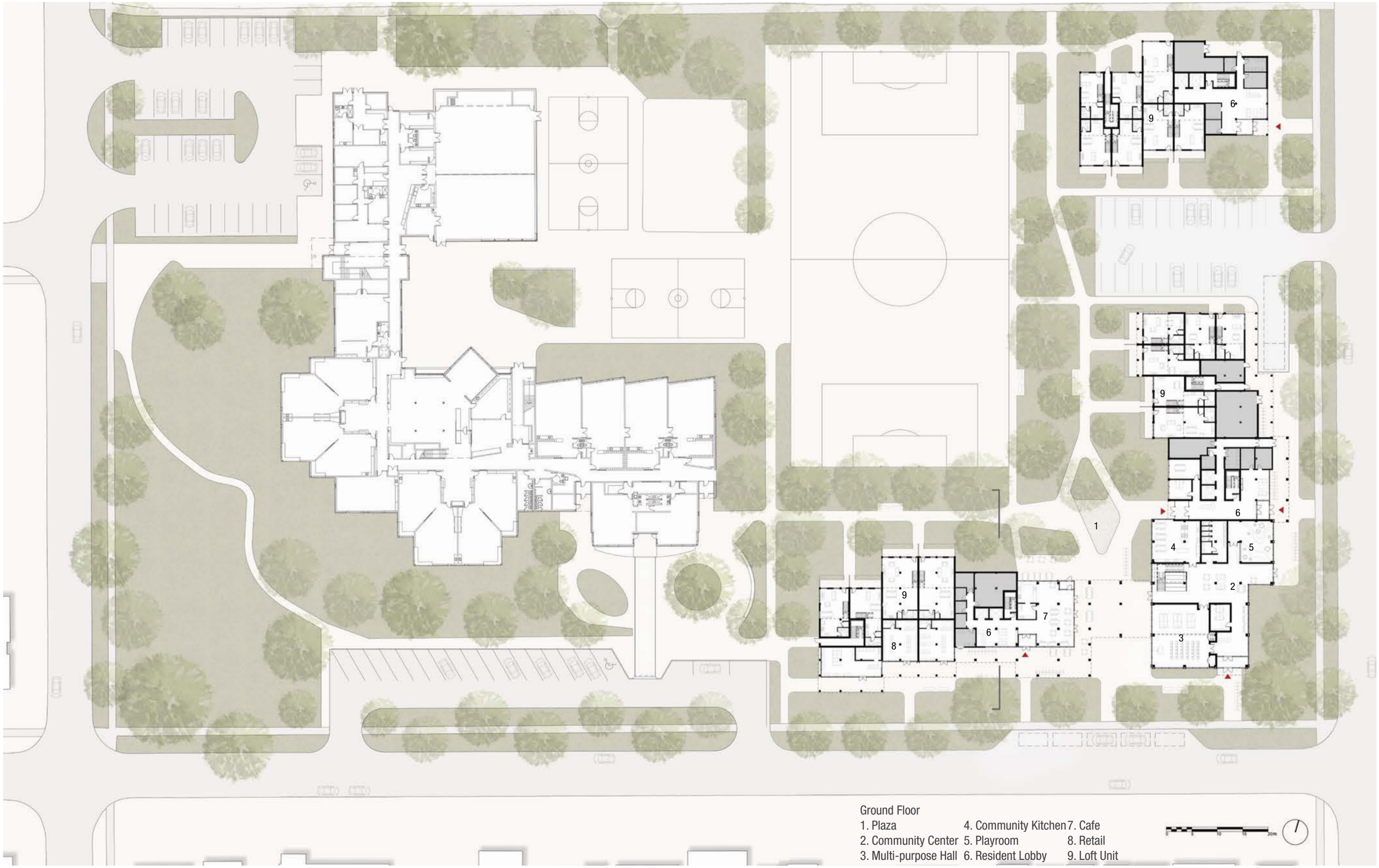


5. Adjusting building volume to create smooth transitions between low and mid-rise buildings.



6. Voids create shared living space and visual connection at upper level.

Amenities
- Gym
- Library
- Community garden
- Party room
Community Center
- A place where the neighborhood could gather
- A multi-purpose hall that could hold various events
- Community kitchen
- Playroom


9
6
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7
Ground Floor
1. Plaza
2. Community Center
3. Multi-purpose Hall
4. Community Kitchen
5. Playroom
6. Resident Lobby
7. Cafe
8. Retail
9. Loft Unit

Second Floor

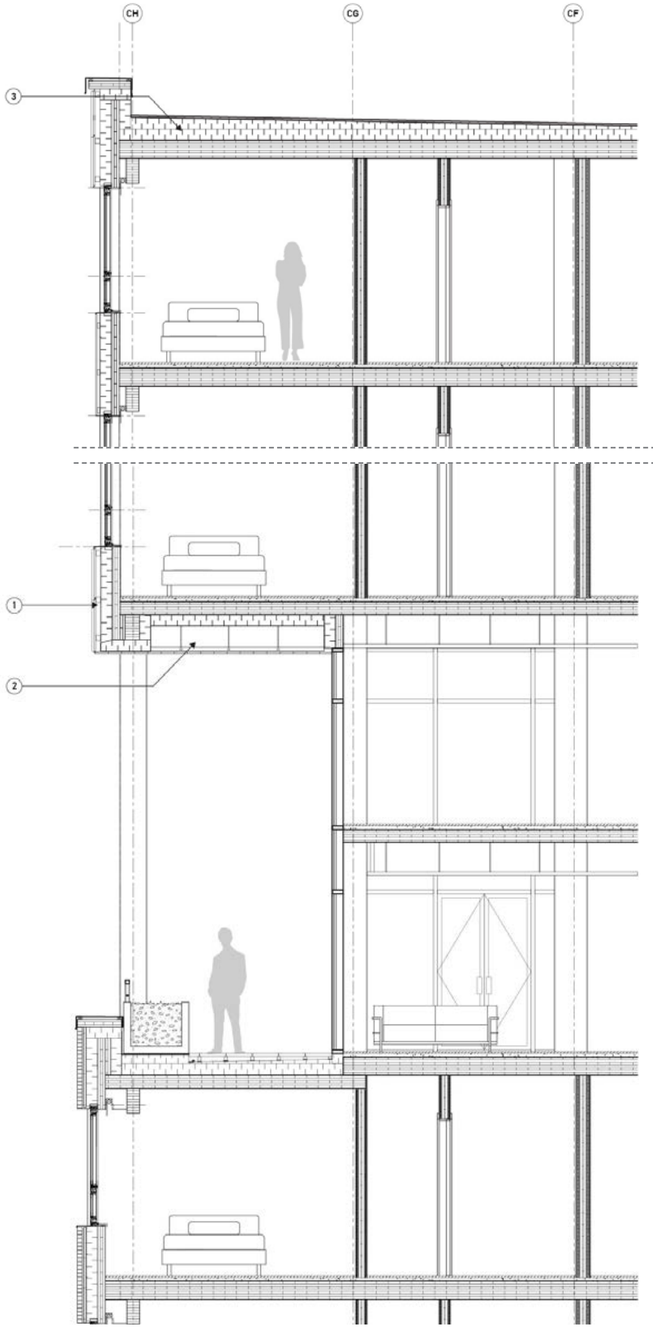
1. Gym
2. Multifunction Room
3. Library
4. Community Garden
2. Gathering Room
3. Changing Room

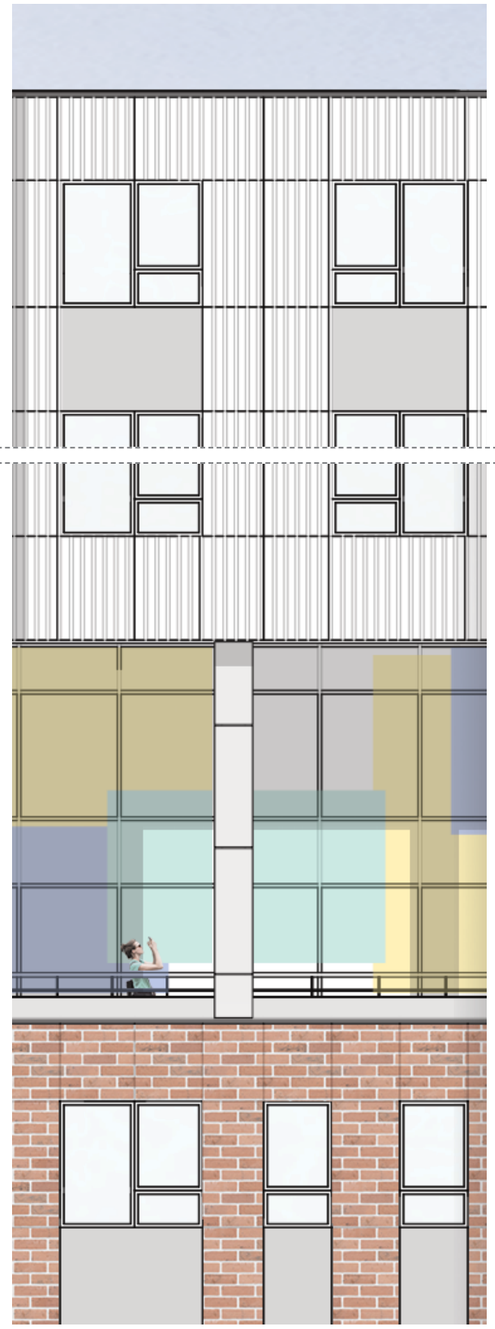
Fourth Floor

1. Lounge
2. Communal Garden
3. Gathering Room

1-Bed Room Unit / Studio | 2-Bed Room Unit | 3-Bed Room Unit | 4-Bed Room Unit

Facade Detail





1. Exterior Wall

Exterior	
25mm	Terracotta Cladding
25mm	Ventilated & Drained Air Cavity
153mm	Rigid Insulation
1mm	Air Barrier & WRB Membrane
105mm	3-ply CLT Wall Panel
13mm	Interior Gypsum Board Finish
Interior	

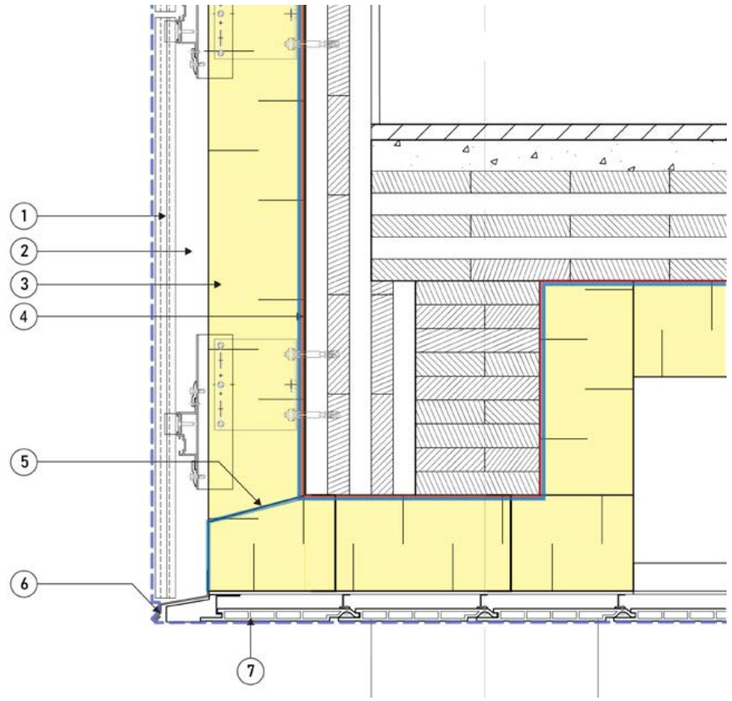
2. Soffit

Interior	
25mm	Flooring Finish
50mm	Concrete Topping
139mm	5-ply CLT Floor Panel
1mm	Air Barrier & WRB Membrane
153	Rigid Insulation
50mm	Soffit Panel
Exterior	

3. Roof

Exterior	
6.2mm	Bitumen Roofing Membrane
4.8mm	Asphalt Protection Board
153mm	Rigid Insulation
1mm	Air Barrier & WRB Membrane
191mm	7-ply CLT Roof Panel
13mm	Interior Gypsum Board
Interior	

Soffit-to-Wall Detail



Control Layer

- Water-Shedding Surface
- Water Control
- Air Control
- Thermal Control

1.Terracotta Cladding
2.Ventilated & Drained Air Cavity
3.Rigid Insulation
4.Air Barrier and WRB Membrane
5.Cross-cavity Flexible Flashing Membrane
6.Sheet Metal Flashing
7.Rice Composite Soffit Panel

03

Re-imagining Downsview

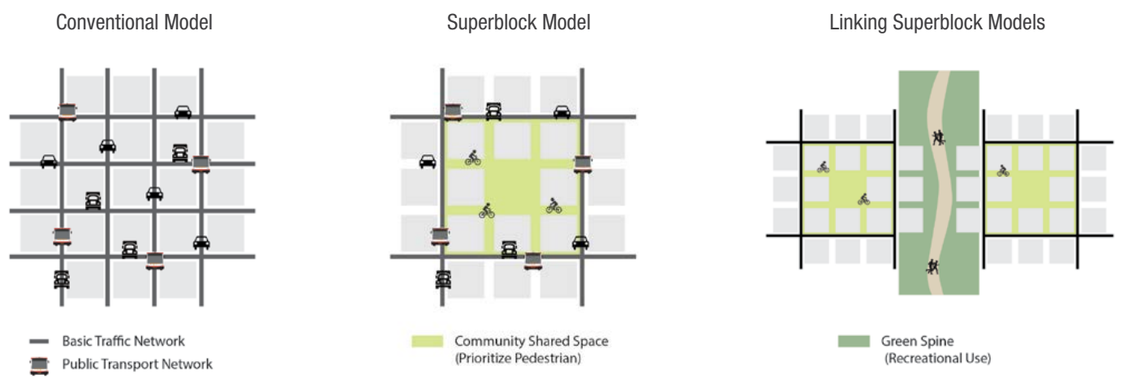
A Vision for Downsview's Pedestrian-oriented Community

M.Arch Studio
Location: Toronto
Collaborator: Erela Chan, Lixia Xu
Software: Revit, Rhino, Illustrator, Photoshop

The current Downsview area acts as a barrier, dividing the surrounding communities, and the site feels remote and difficult for Torontonians to navigate. This project envisions a pedestrian-oriented urban environment where seamless connectivity and integrated green spaces transform Downsview into an accessible, inviting landscape that encourages people to move through the area and engage with nature. The scale and rhythm of each neighborhood are carefully considered to prioritize human comfort, safety, and accessibility.

One of the major features of this project is a green spine planned to accommodate a dedicated off-street cycling and pedestrian network. The green spine connects Downsview Park, three existing subway stations, and the entire superblocks community. The superblocks are meticulously designed with distinct programs to support the anticipated growth of the Downsview area. The east-west corridor emerges as a dynamic hub for social and cultural activities, whereas the north-south corridor is primarily designated for residential purposes. Vehicular roads are strategically planned to minimize intersections with pedestrian pathways, thereby fostering a vibrant and walkable urban neighborhood.

Design Principle



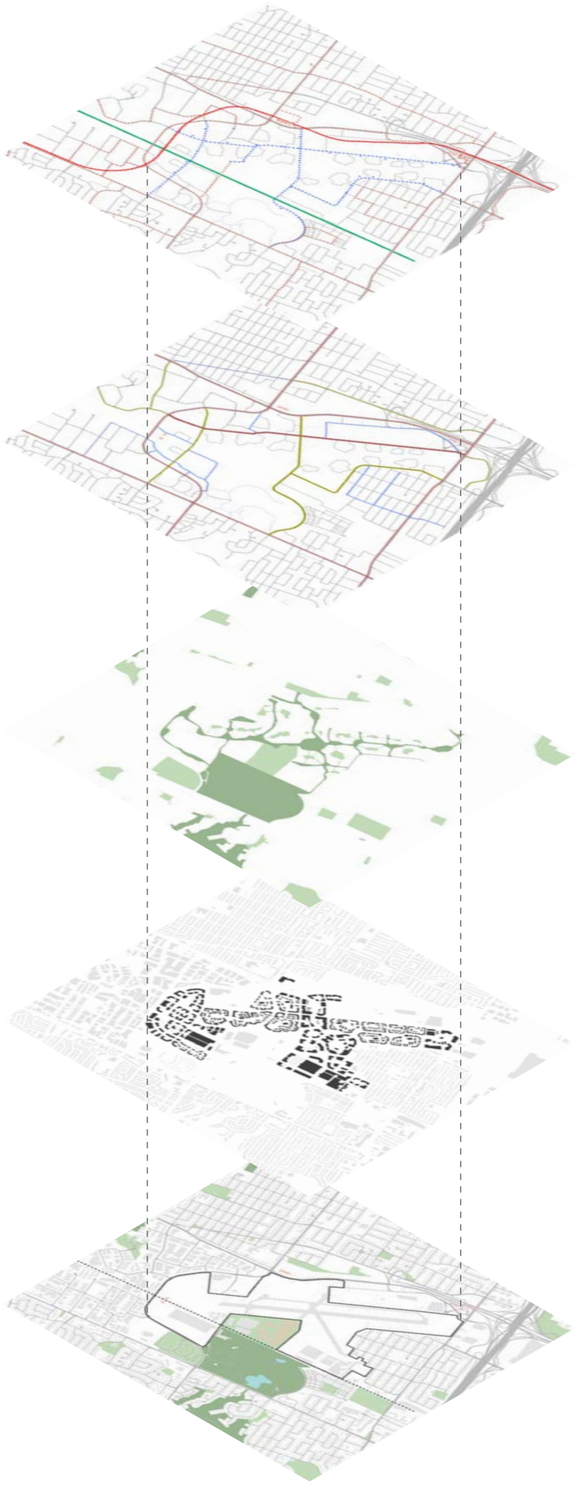
Public Transport Network

Primary Street Network

Green Spine

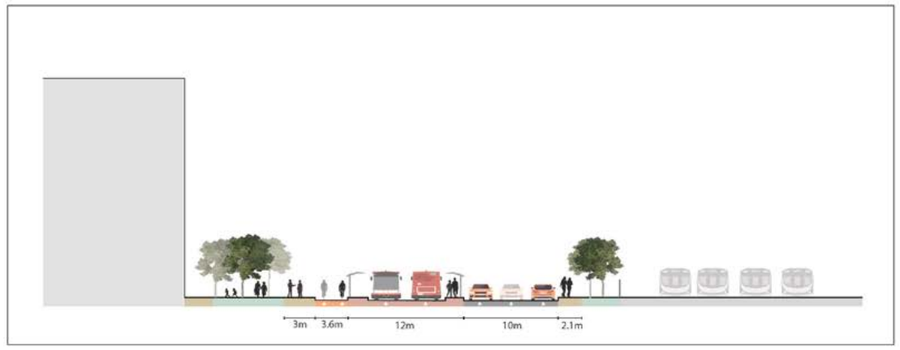
Built Form

Existing Site Context



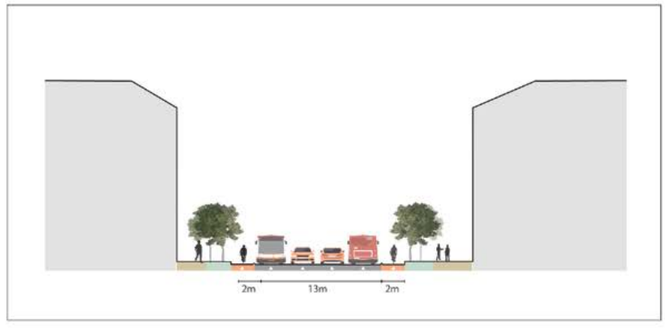
Proposed Street Section

Major Arterial Streets

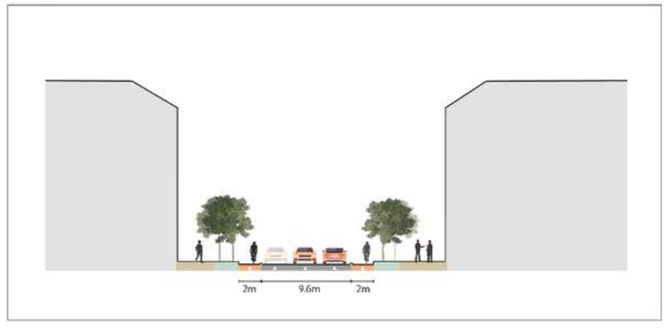


Vehicle Lane
Dedicated Bus Lane
Green Space
Pedestrian Path
Bicycle Lane

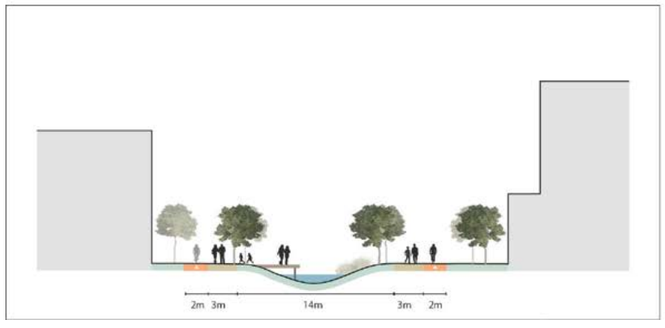
Minor Arterial Streets



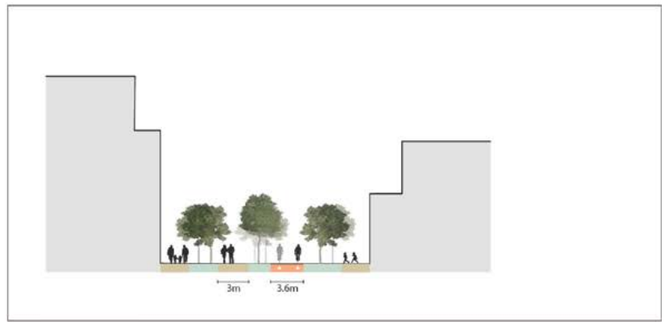
Collector Streets



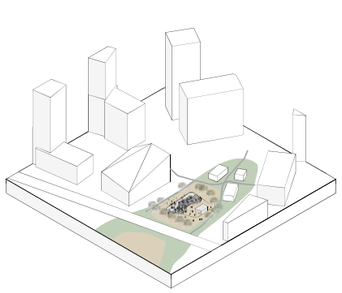
Green Corridor



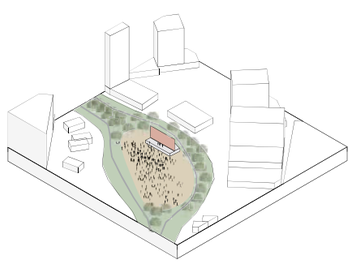
Local Pedestrian Streets



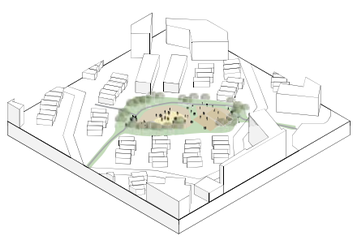
Open Space Typology



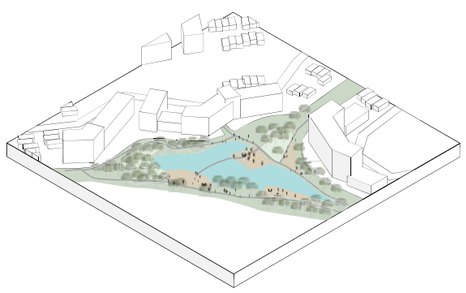
Amphitheater



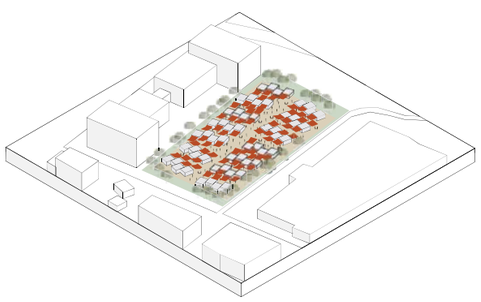
Plaza



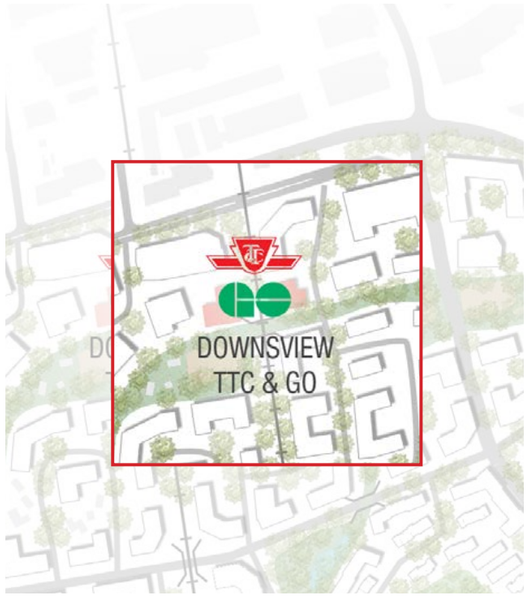
Playground



Park



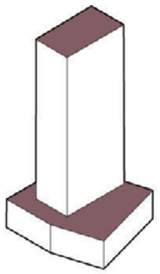
Market



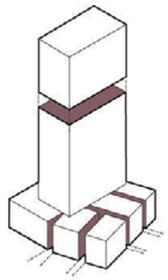
Medium-scale Architectural Scenario

The area near the Downsview Park Station was selected to develop further due to its strategic location where existing infrastructure, key landscape elements, and public programs converge. Community programs were carefully planned and integrated with the office component of the project. This approach ensured that the development not only fulfilled its commercial objectives but also created space that contributed to the surrounding community.

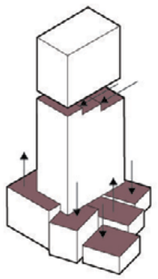
Design Strategy



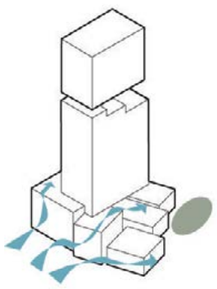
1. Conventional podium & tower.



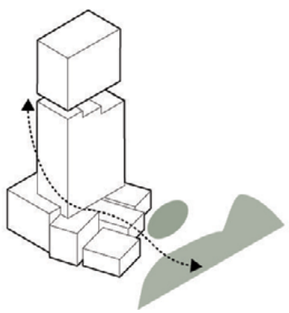
2. Breaking down massing into smaller scale.



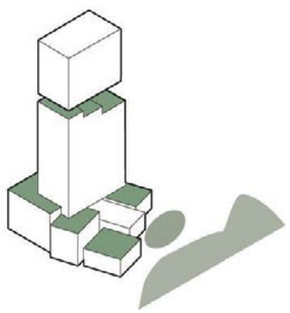
3. Adjusting the building form.



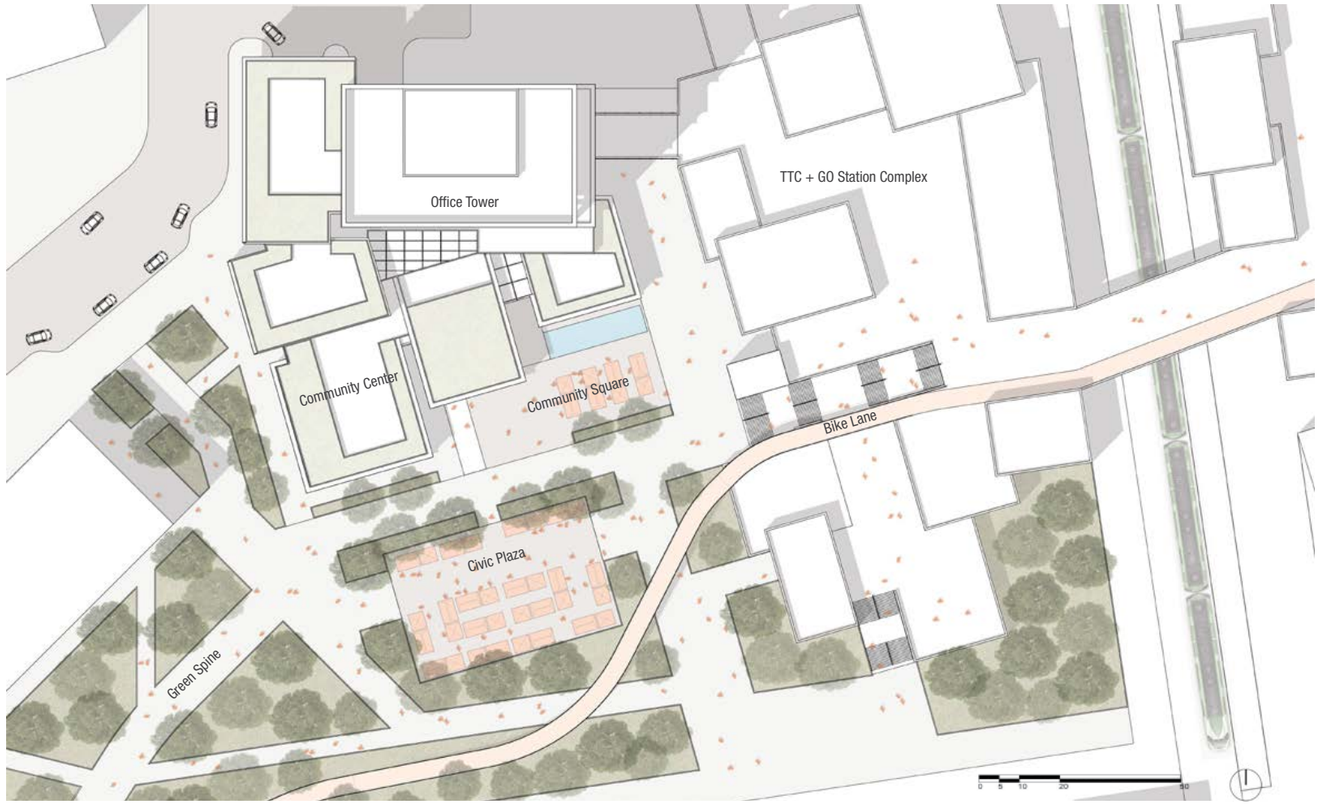
4. The building mass creates a comfortable community square.

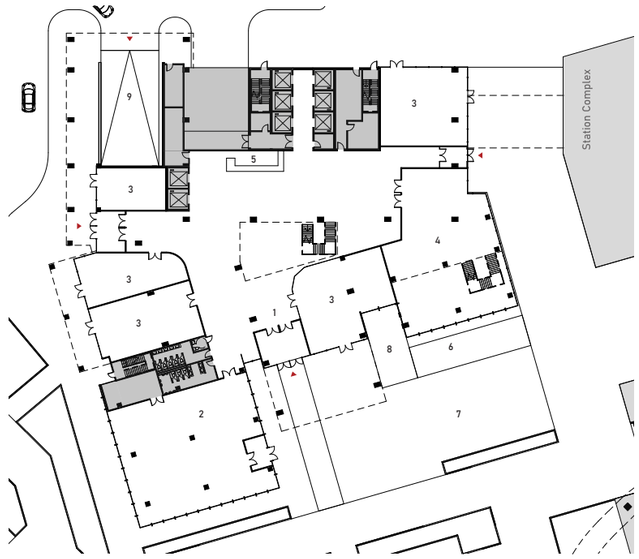


5. Connecting two different scale within the site - lower level open space to high rise development.

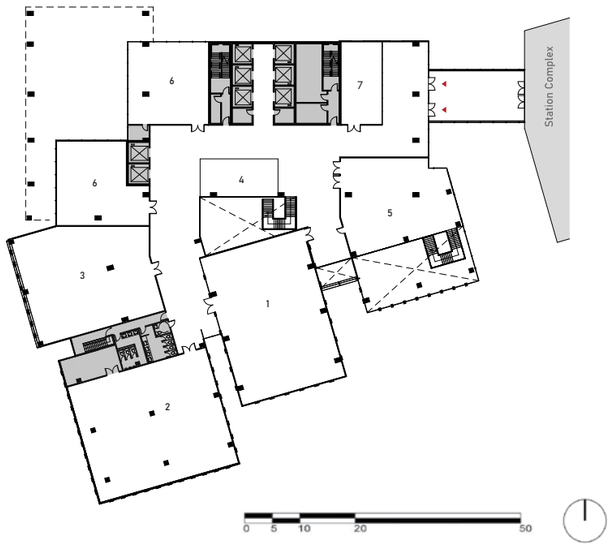


6. Stepped terrace to provide more green space.





First Floor
1. Main Entrance
2. Community Center
3. Retail
4. Job Resource Center
5. Service Counter
6. Water Feature
7. Community Square
8. Patio
9. Carpark Entrance



Second Floor
1. Multifunction Hall
2. Gym Room
3. Daycare Centre
4. Lounge
5. Job Resource Center
6. Multifunction Room
7. Co-working Space

04

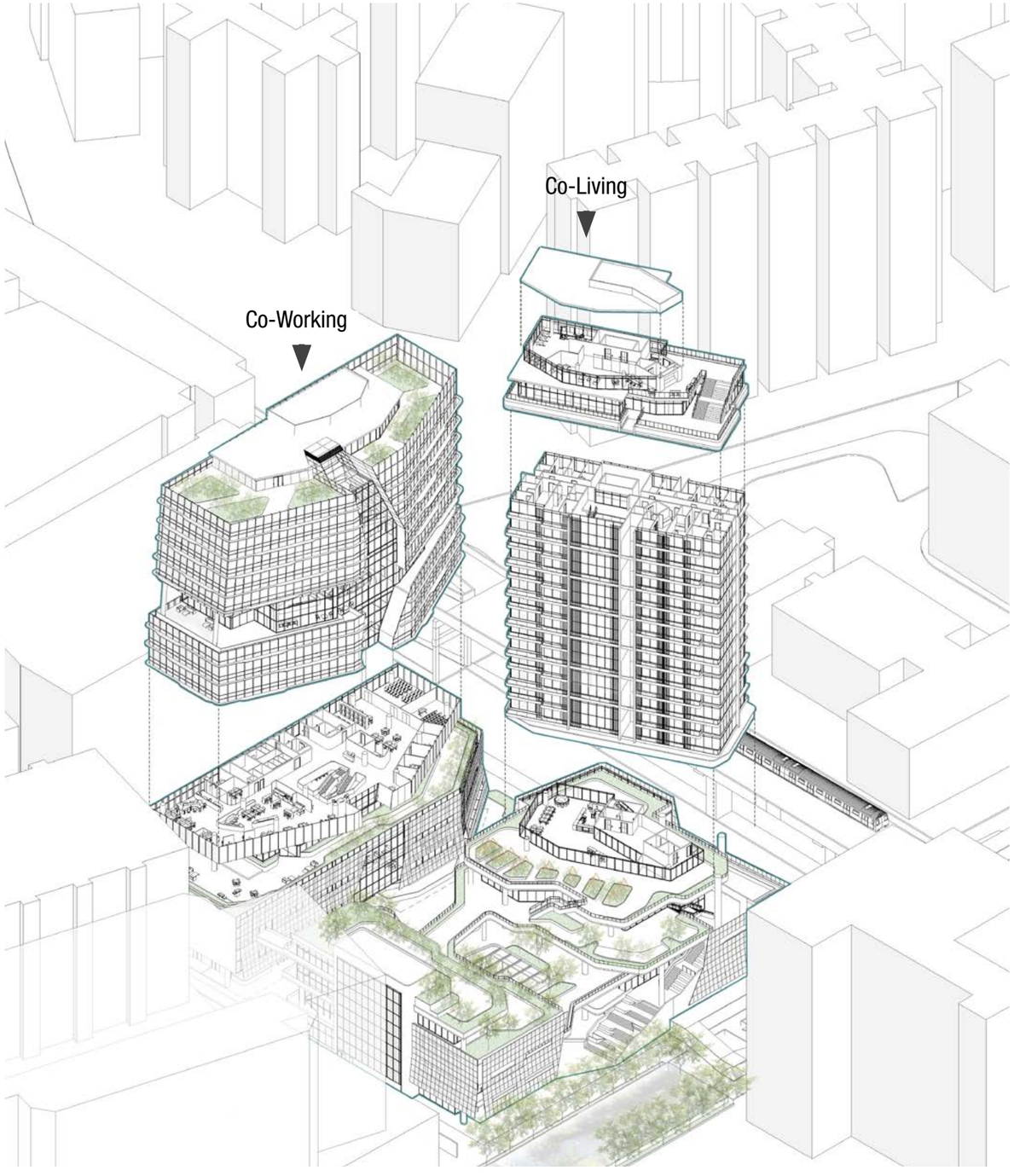
INCUBATOR

A New Urban Community for the Former Industrial District

BScAs Thesis
Location: Hong Kong
Software: Revit, Illustrator, Photoshop

The Kwun Tong area is set to be revitalized and transformed into the city's second Central Business District under the latest redevelopment plan. Once an industrial hub, it will be reimagined as a mixed-use urban district with improved public spaces, pedestrian-friendly streets, and enhanced connectivity, fostering a vibrant and inclusive community for modern urban living.

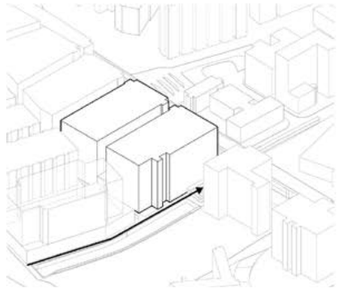
The project sited closely to the recreational green corridor along Tsui Ping River, a trail that also connects with the promenade. This project is conceived as a vital transition connecting the existing industrial/commercial with residential areas, while adding more green space to the urban fabric. The main goal is to develop a new urban typology for Kwun Tong that incorporates urban farming with other programs.



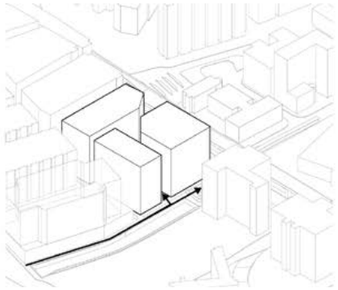
Concept

Urban Farm | Co-Living | Co-Working | New Community for Kwun Tong

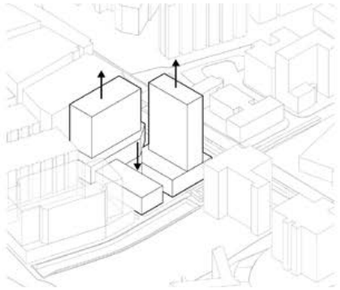
Design Strategy



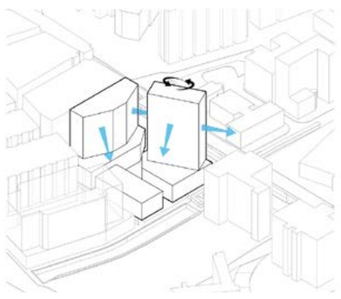
1. Existing blocks.



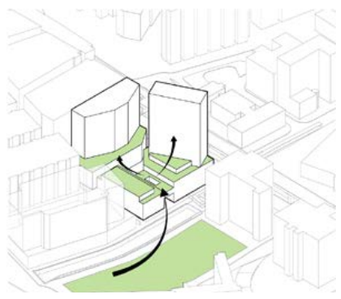
2. Split up the blocks to invite pedestrian.



3. Volume adjustment.



4. Views.



5. Green connections.

Podium Plan

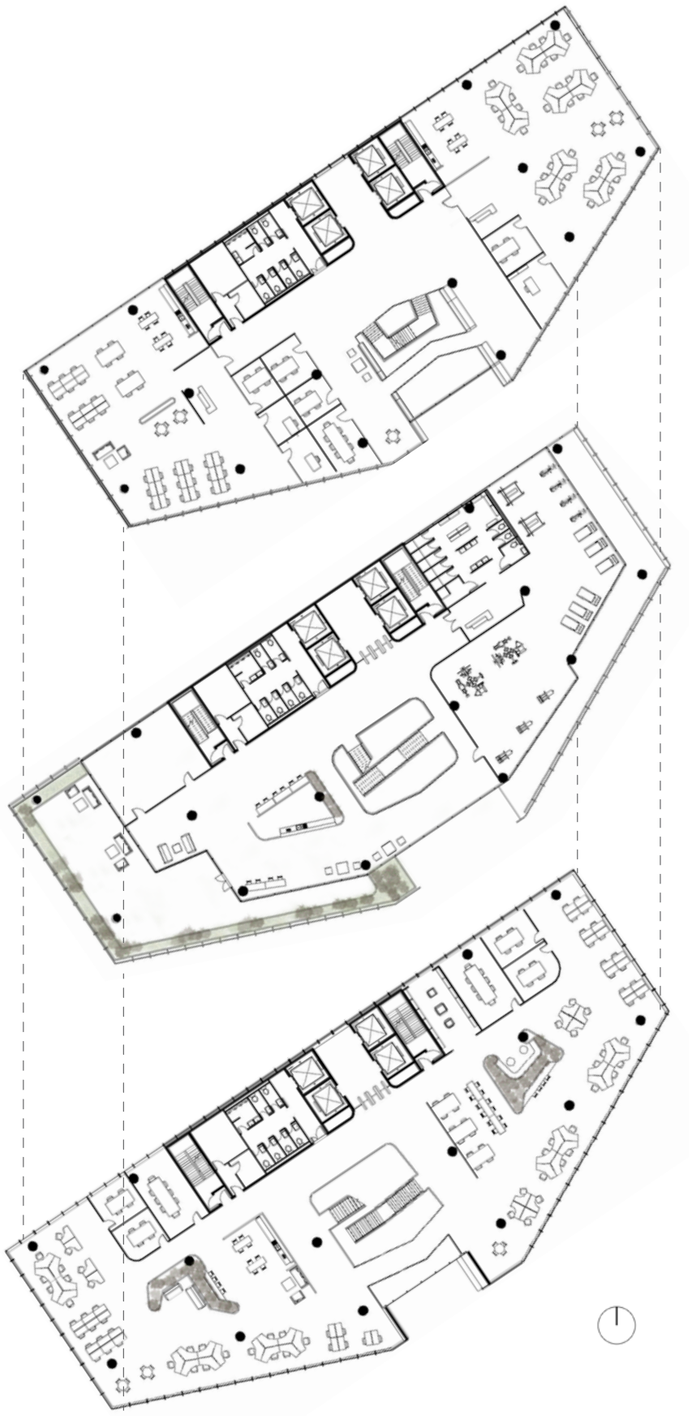
1. Urban Farm
2. Community Kitchen
3. Resident Lift Lobby
4. Sky Terrace
5. Green Deck
6. Rain Garden
7. Startup Co-working Space

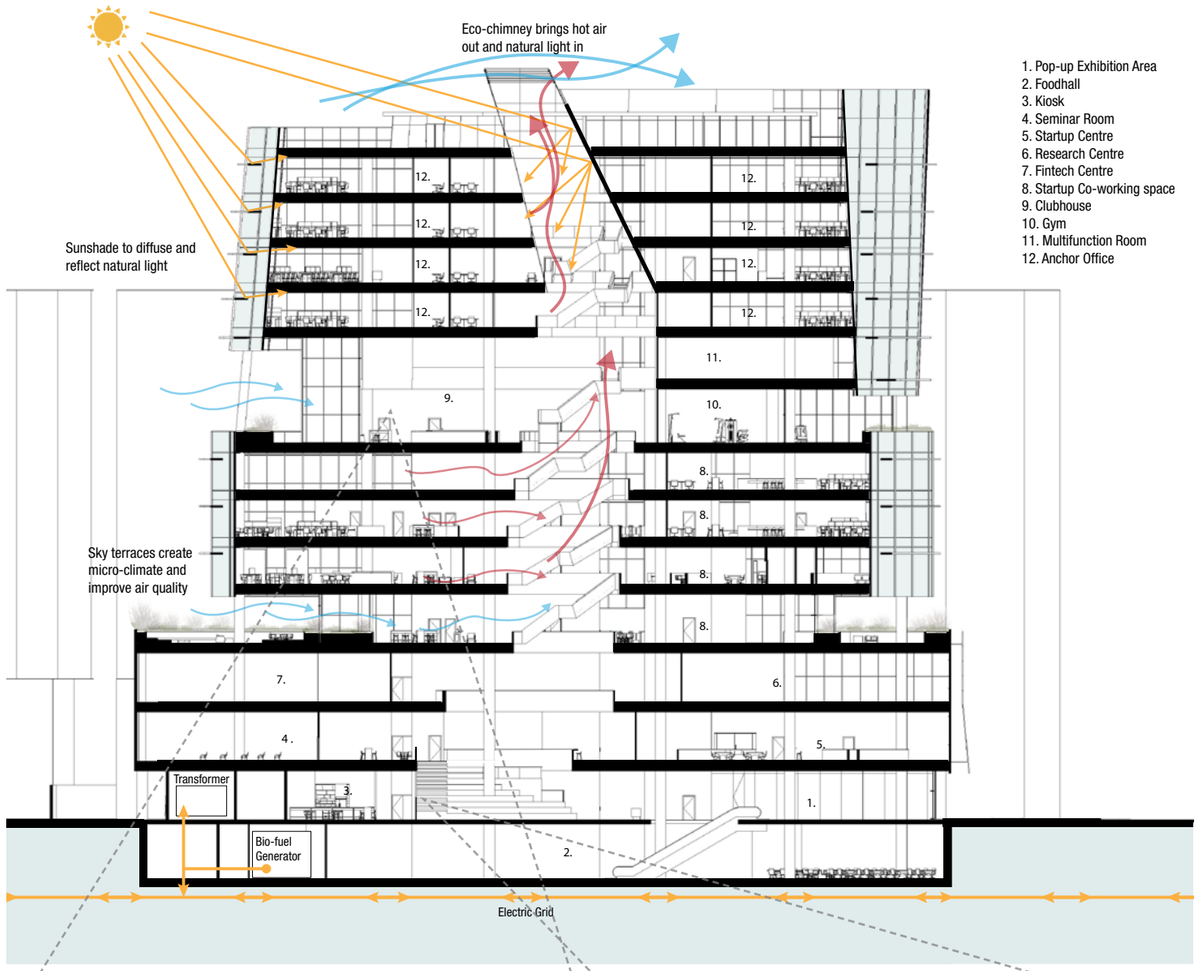
Co-Working Tower

Office
(Floor 9 to Floor 12)

Clubhouse
(Floor 7 and Floor 8)

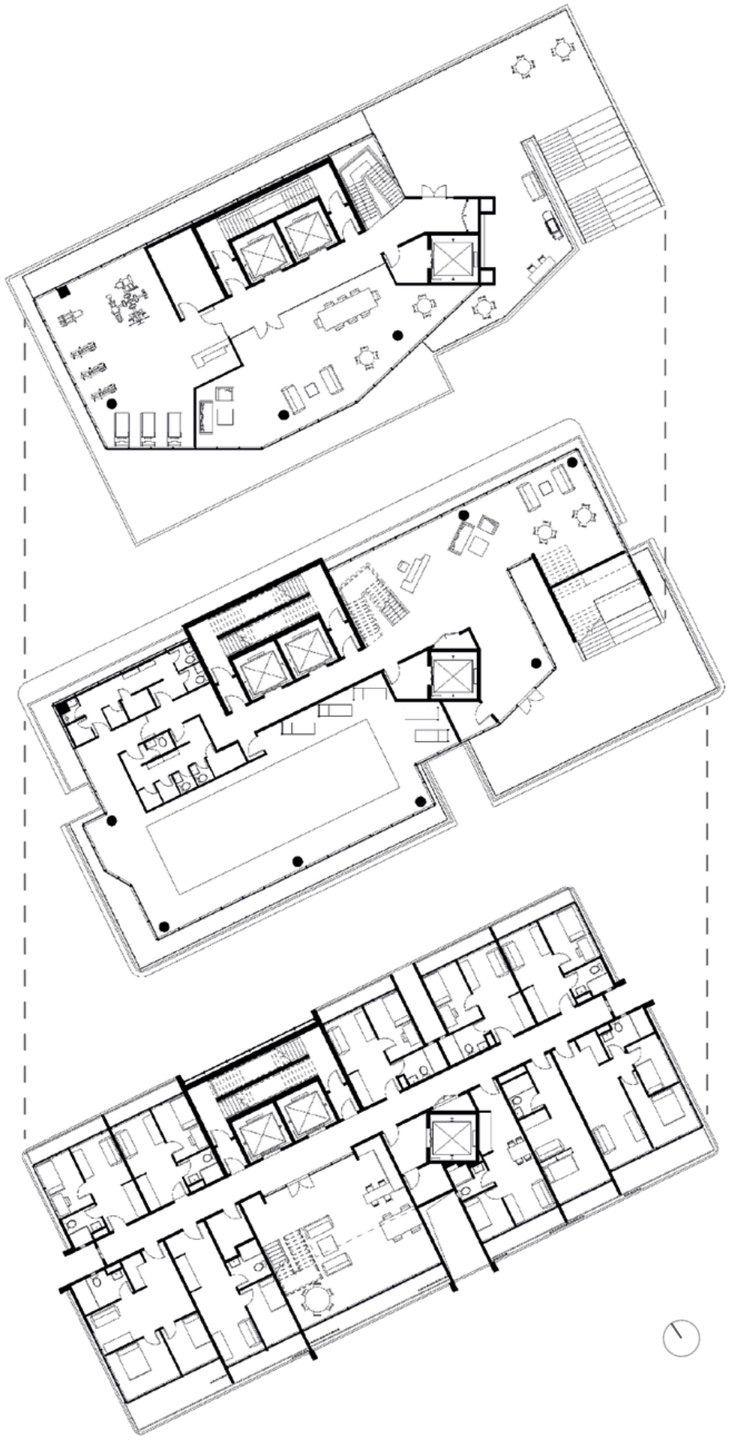
Start-up Co-Working Space
(Floor 4 to Floor 6)





1. Pop-up Exhibition Area
2. Foodhall
3. Kiosk
4. Seminar Room
5. Startup Centre
6. Research Centre
7. Fintech Centre
8. Startup Co-working space
9. Clubhouse
10. Gym
11. Multifunction Room
12. Anchor Office

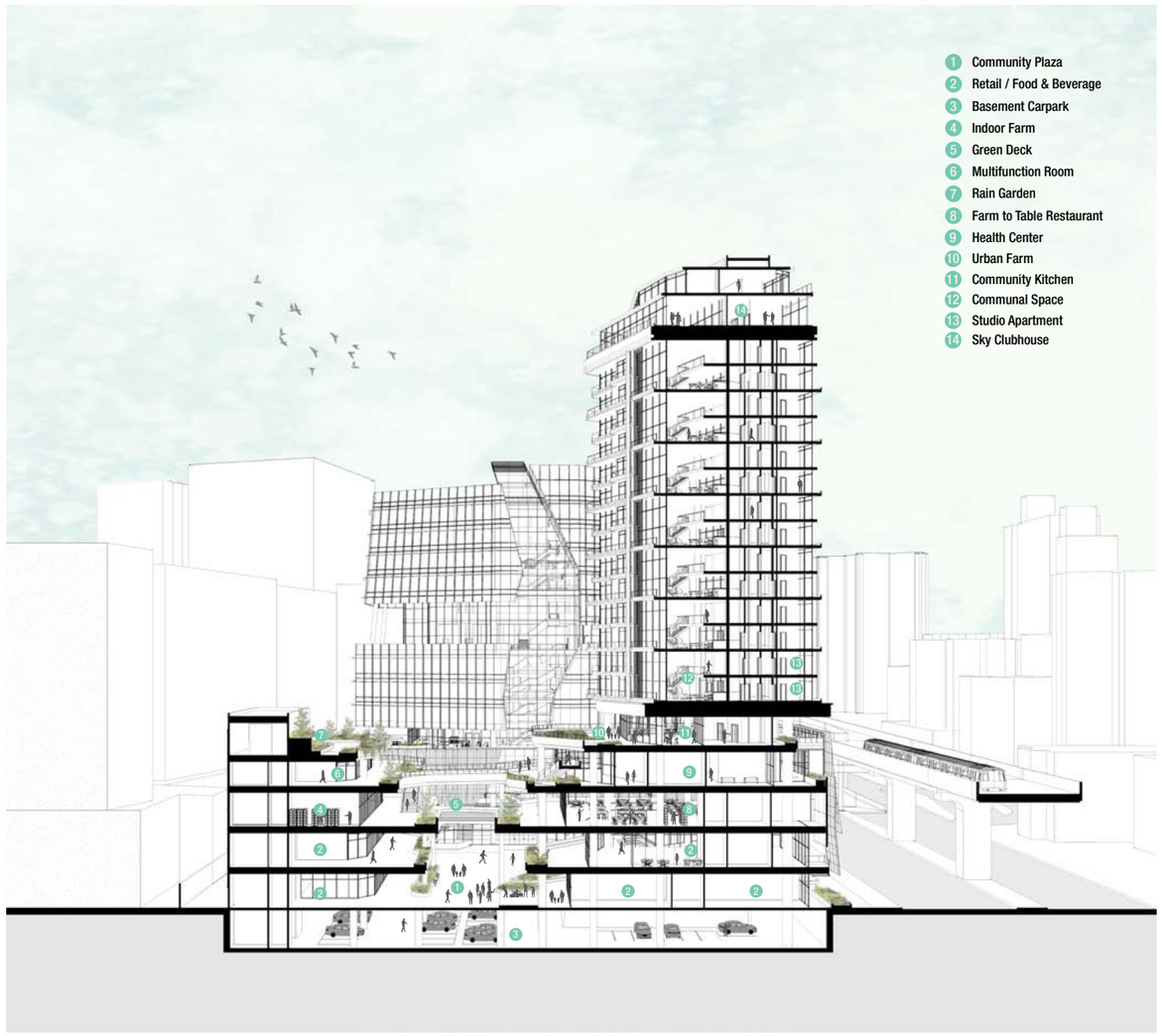
Co-Living Tower



Upper Clubhouse
(Floor 20)

Sky Clubhouse
(Floor 19)

Typical Co-Living
Unit with Double
Height Shared Space
(Floor 5 to Floor 18)



05

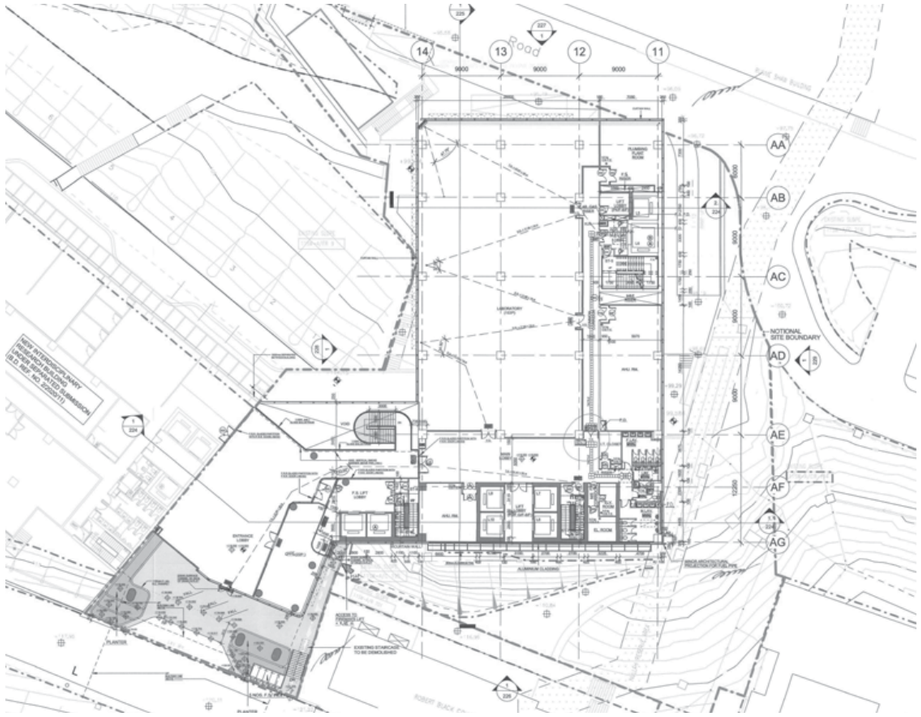
HKU Tech-Landmark I-IV

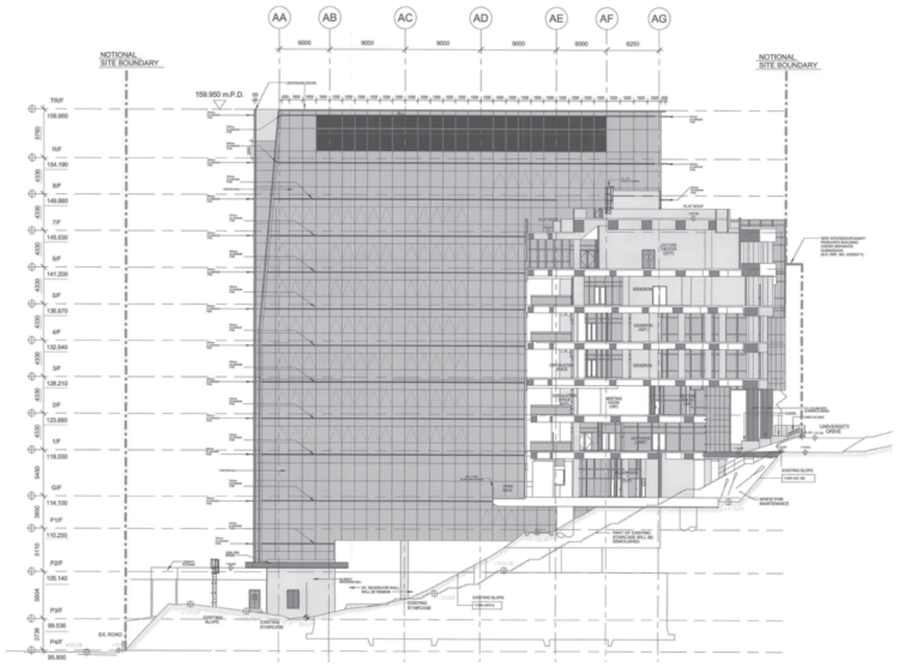
Professional Work at Wong & Ouyang (HK) Ltd.

Project Type: Institutional
Status: Under Construction
Software: Revit, AutoCAD

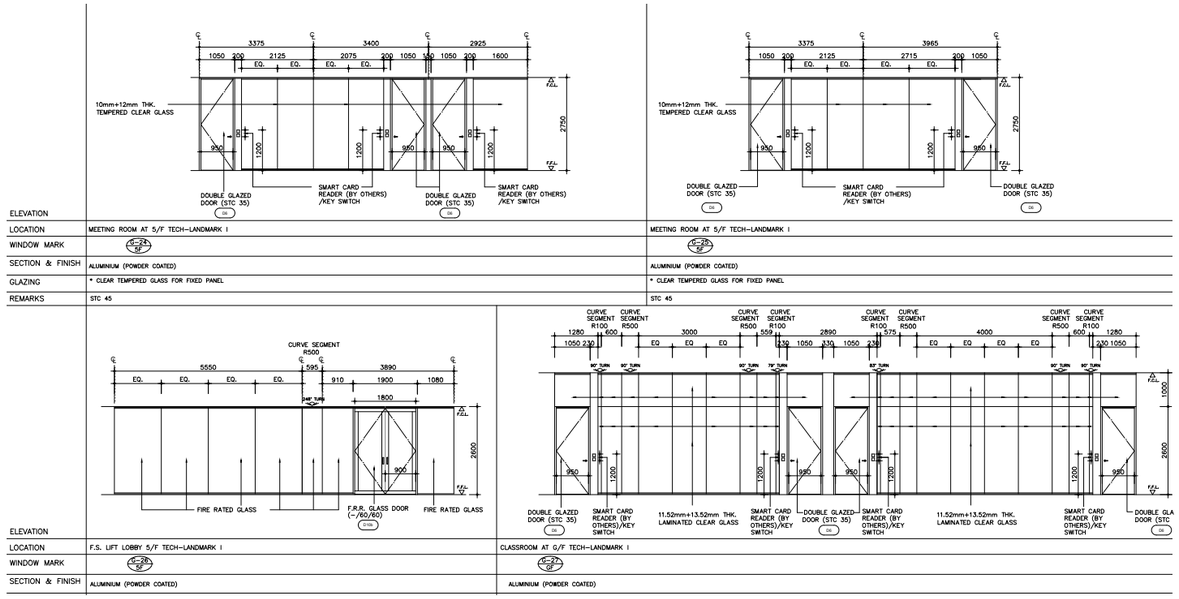
This was the main project I worked on during my time at Wong & Ouyang. At that time, the firm was transitioning to Revit for project documentation, and one of my responsibilities was to update the existing Revit model in accordance with the latest architectural and structural drawings. After that, I revised the drawing sheets in Revit and reviewed building codes to ensure compliance with government submission standards. Additionally, I was responsible for the interior design working drawing set, collaborating closely with interior designers and technologists to produce accurate drawings and meet tight deadlines.

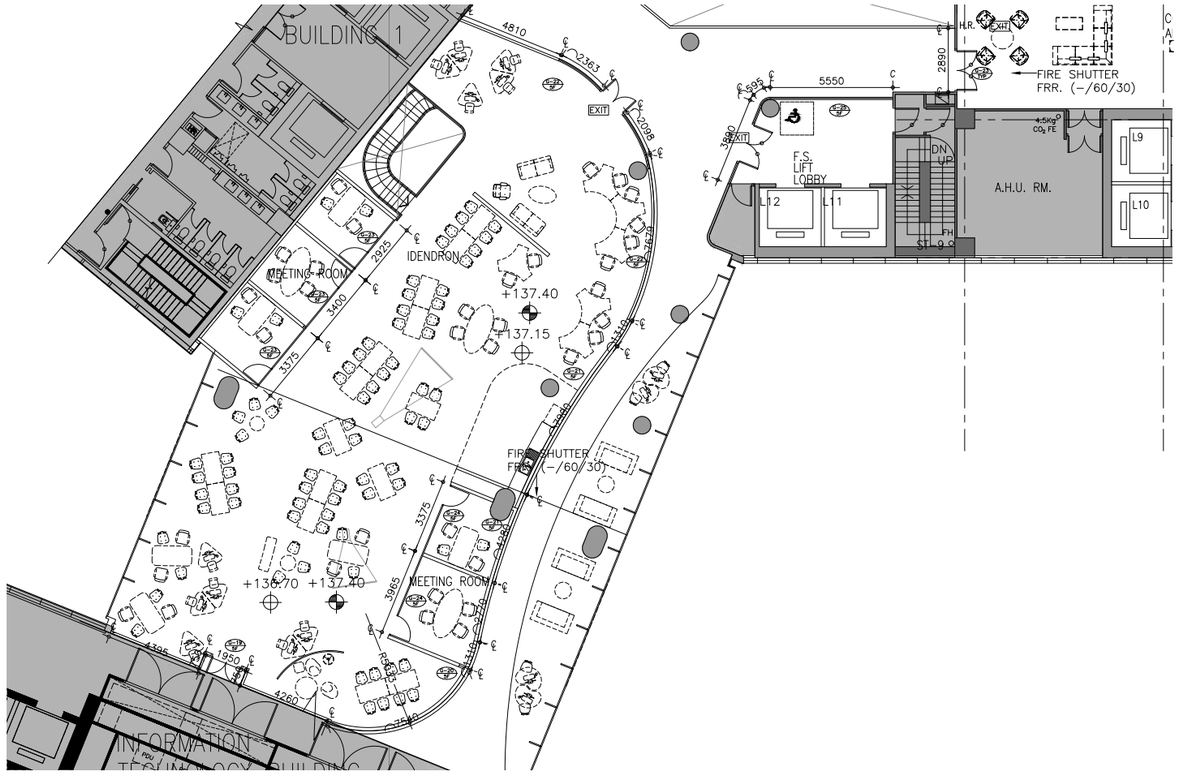
Submission Drawings Produced in Revit



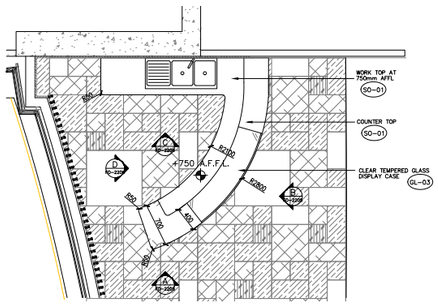


Glass Partition Plan and Schedule

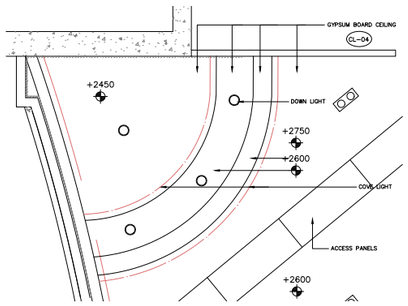




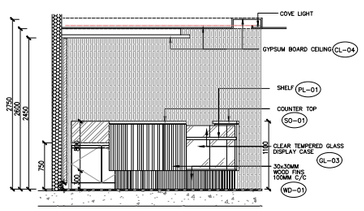
Working Drawings for Tender Package



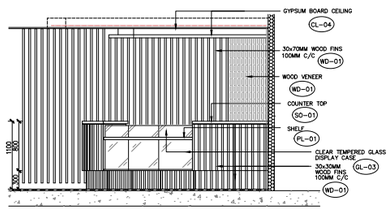
1 6/F COFFEE CORNER DETAIL PLAN
1:20 (A1)/1:40 (A3)



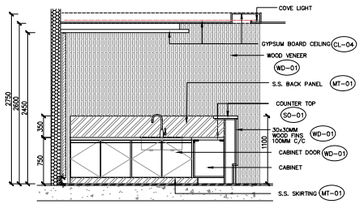
2 6/F COFFEE CORNER REFLECTED CEILING PLAN
1:20 (A1)/1:40 (A3)



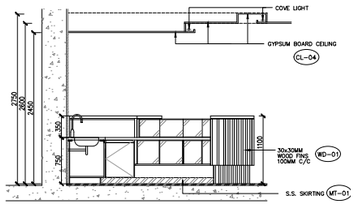
A REAR ELEVATION
1:20 (A1)/1:40 (A3)



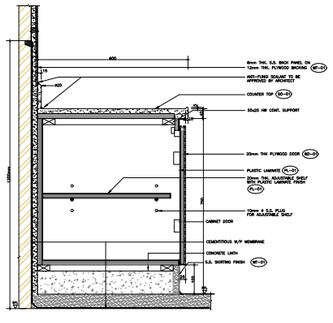
B FRONT ELEVATION
1:20 (A1)/1:40 (A3)



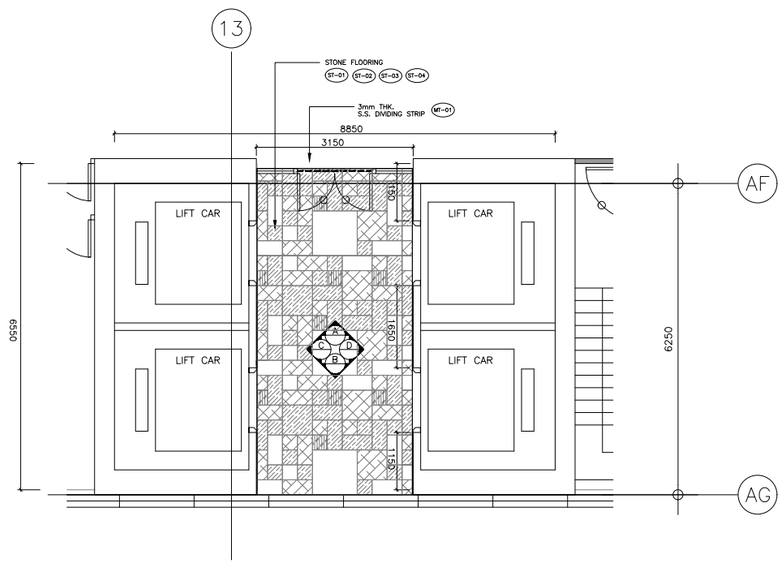
C 6/F COFFEE CORNER SECTION
1:20 (A1)/1:40 (A3)



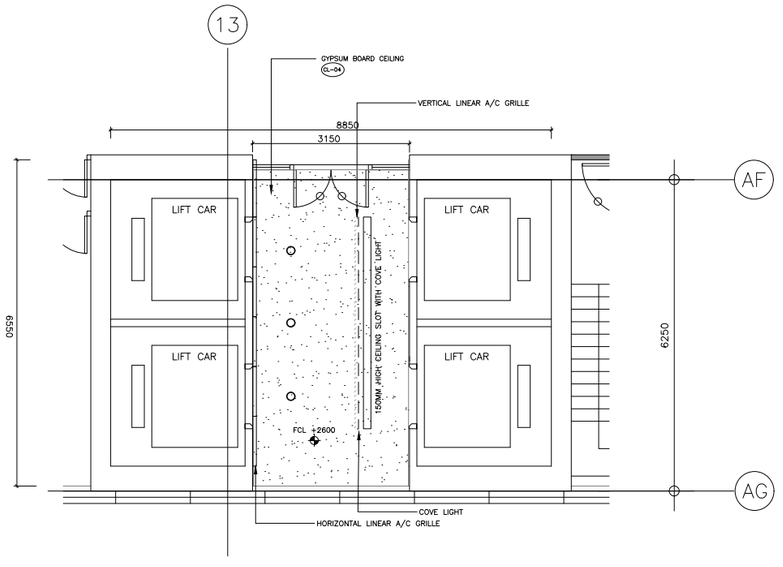
D 6/F COFFEE CORNER SECTION
1:20 (A1)/1:40 (A3)



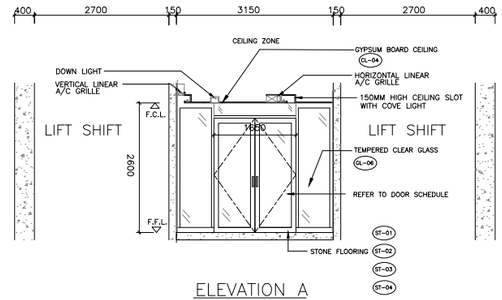
E COFFEE CORNER CABINET DETAIL
1:5 (A1)/1:10 (A3)



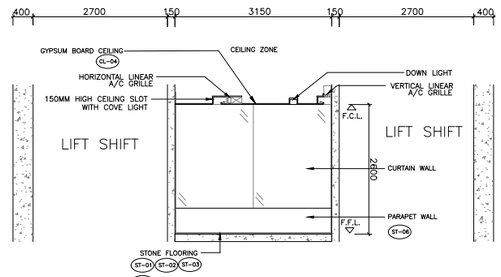
TYPICAL LIFT LOBBY PLAN



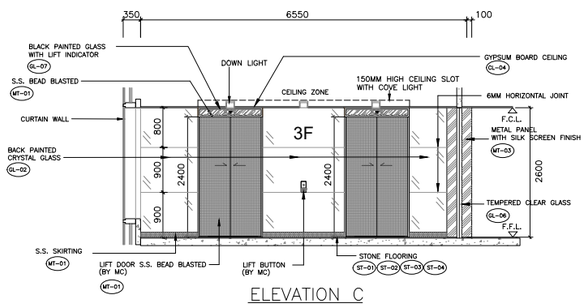
TYPICAL LIFT LOBBY PLAN
REFLECTED CEILING PLAN



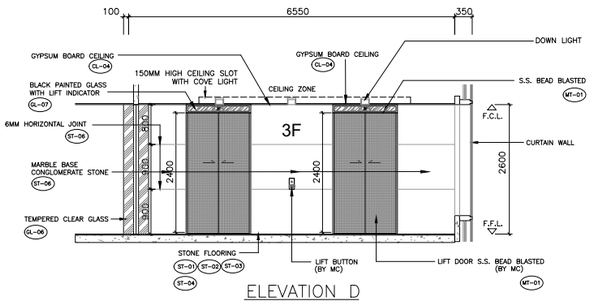
ELEVATION A



ELEVATION B



ELEVATION C



ELEVATION D

06

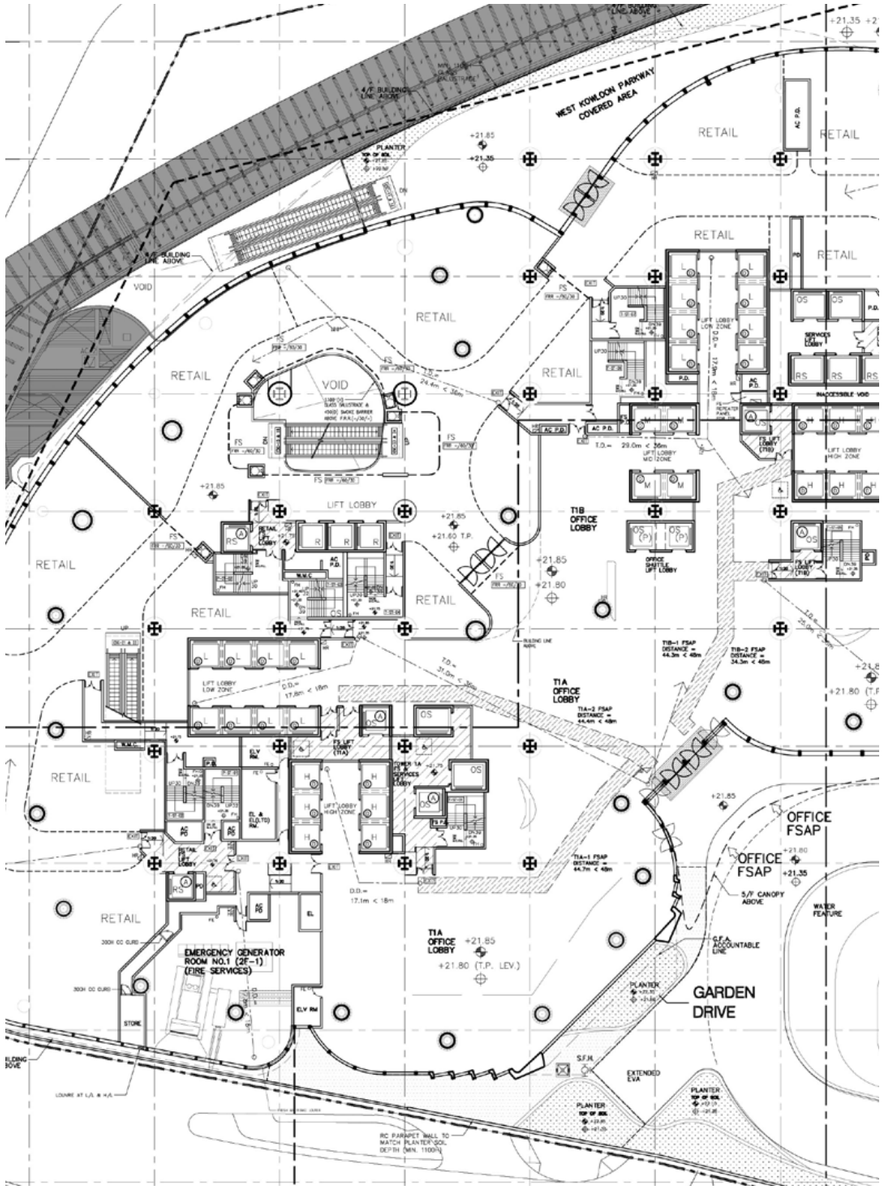
West Kowloon Station Topside Development

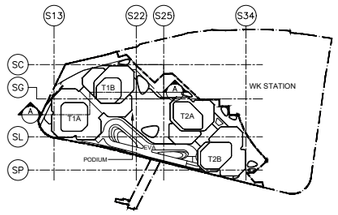
Professional Work at Wong & Ouyang (HK) Ltd.

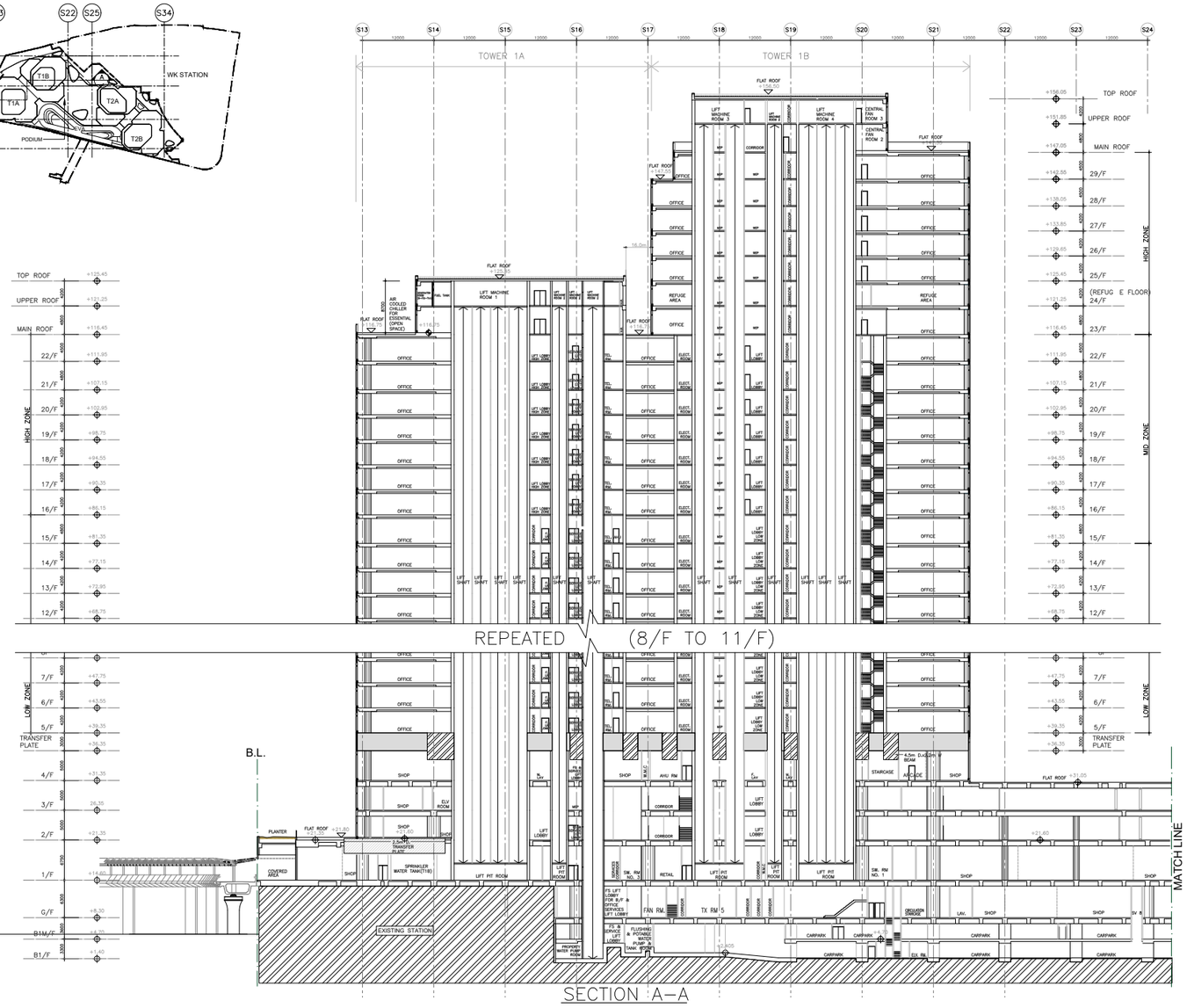
Project Type: High-rise Commercial + Retail
Status: Under Construction
Software: AutoCAD

This was another project I worked on in parallel with the HKU Tech-Landmark project. During my first few months at Wong & Ouyang, I assisted the team in developing the architectural drawings—from an initial façade outline to detailed plans that included mechanical and electrical rooms, fire stairs, and retail layouts. I collaborated closely with engineers to ensure room requirements were all met. I also produced plans, sections, and elevations for government submission, researching building codes and demonstrating compliance through the drawings.

Submission Drawings Produced in AutoCAD







07

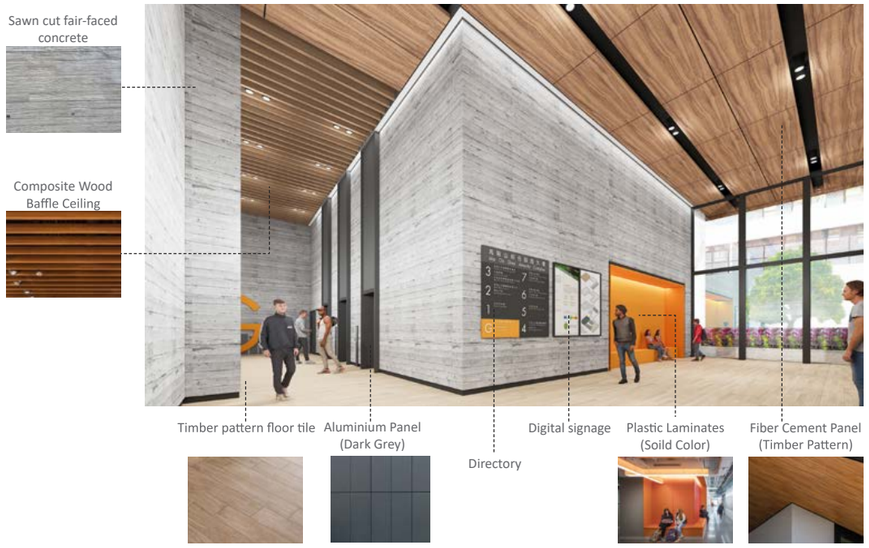
Ma On Shan Amenity Complex

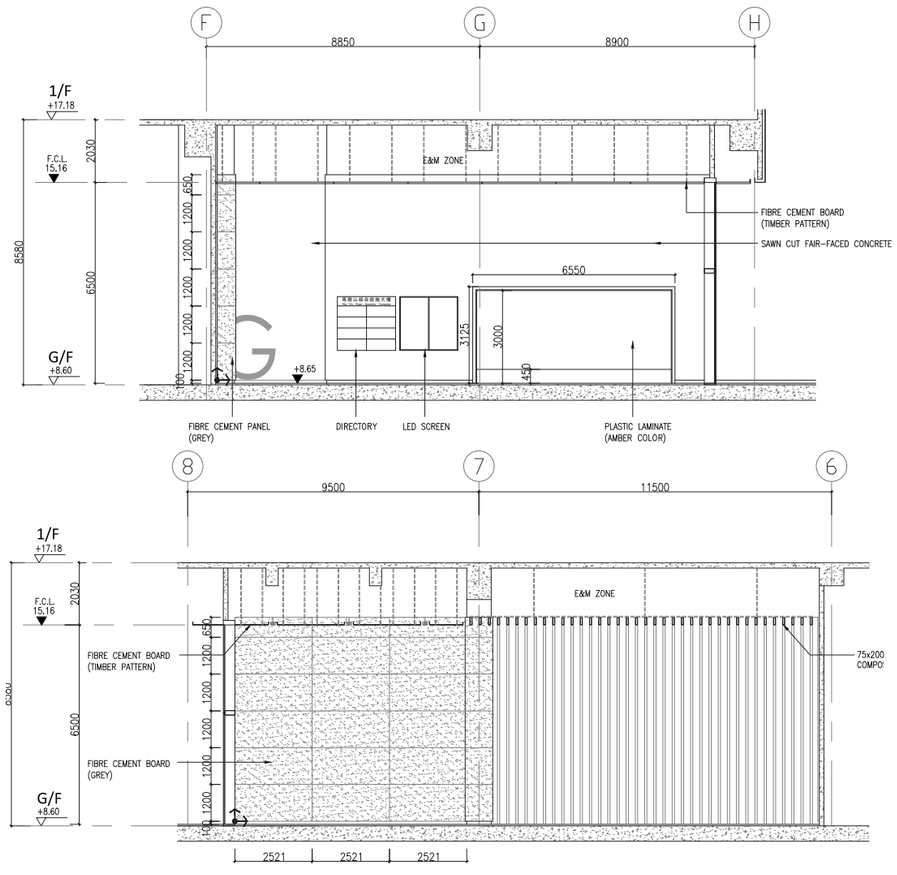
Professional Work at P&T Architects & Engineers Ltd.

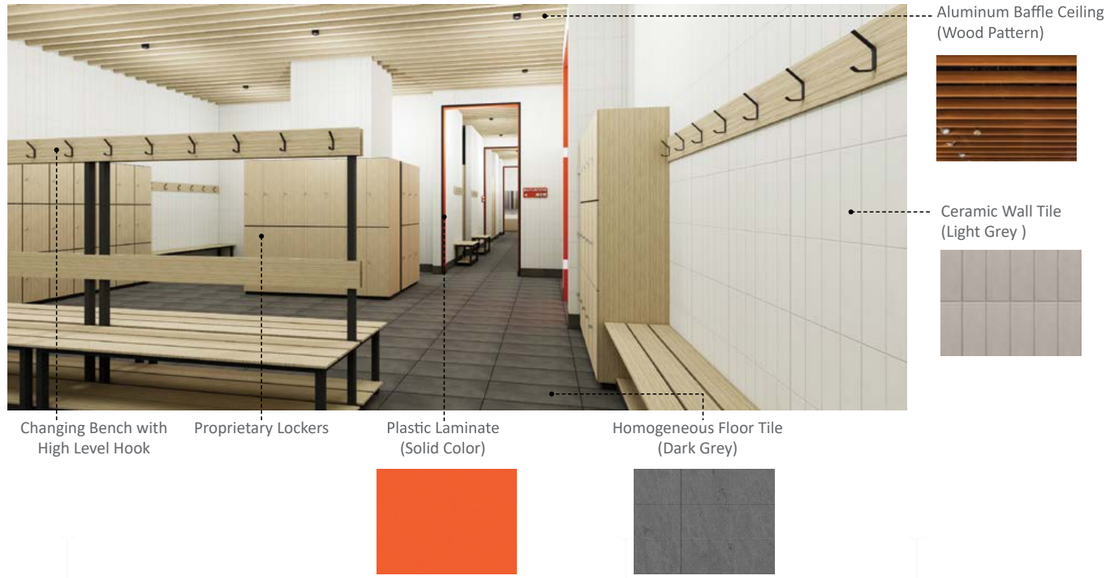
Project Type: Institutional
Status: Under Construction
Software: AutoCAD, SketchUp, Illustrator, Photoshop

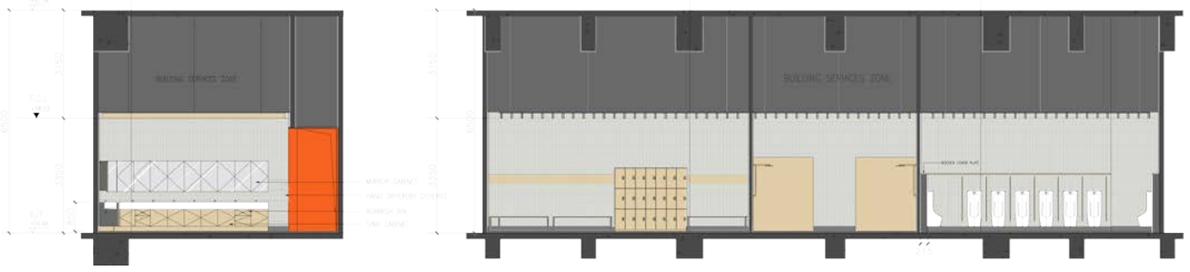
In this project, I was primarily responsible for producing working drawings based on design drawings and renderings. I also created SketchUp models for the gym, playroom, and multifunction room, and designed the parking floor lift lobby entrance.

Interior Design Working Drawings

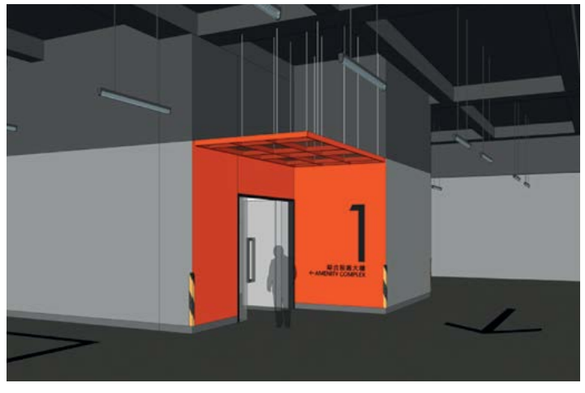








Parking Floor Lift Lobby Entrance



07

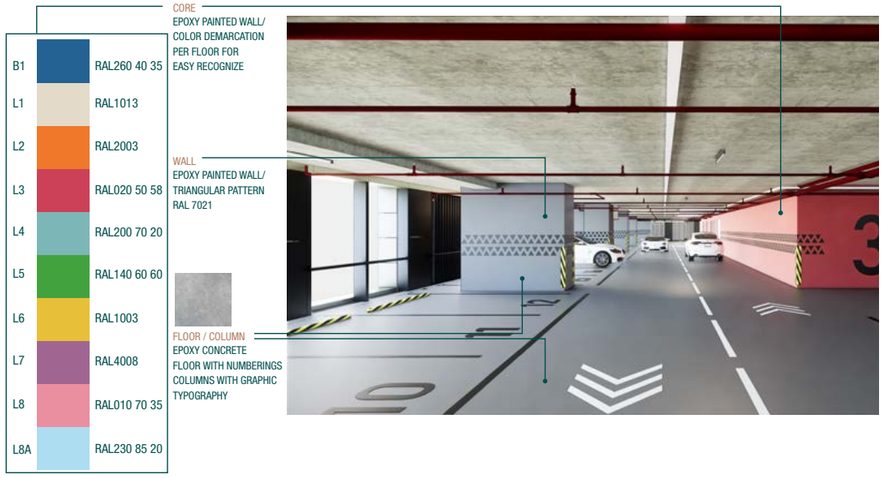
Flatiron by Meridian

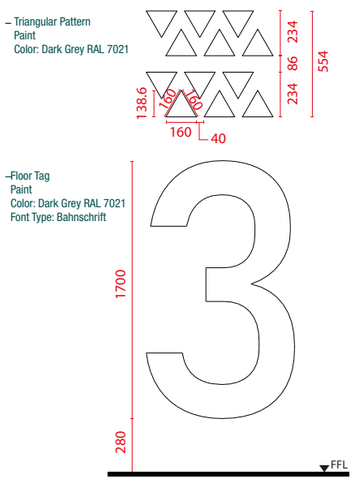
Professional Work at KLS Partnership (HK) Co. Ltd.

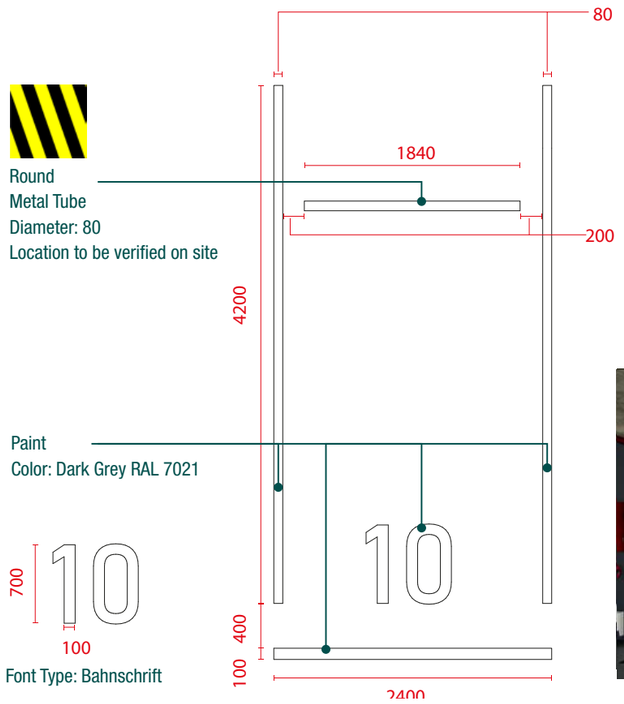
Project Type: High-rise Commercial + Hospitality
Status: Completed in 2021
Software: Revit, AutoCAD, Enscape, Illustrator, InDesign

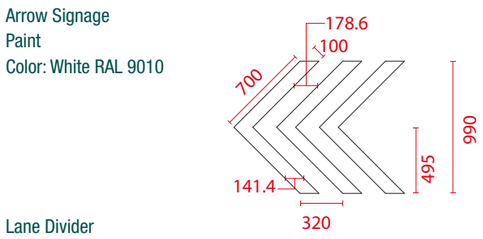
I was responsible for updating and developing the entire Revit model to reflect the latest design changes. I also used the model to determine the extent of façade mock-ups and generate drawings to reflect the design intent. Additionally, I prepared a parking design package that included renderings, color coding, and signage.

Parking Design Package

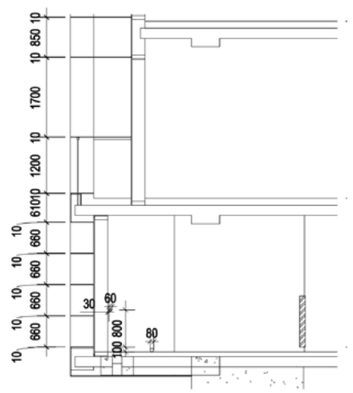


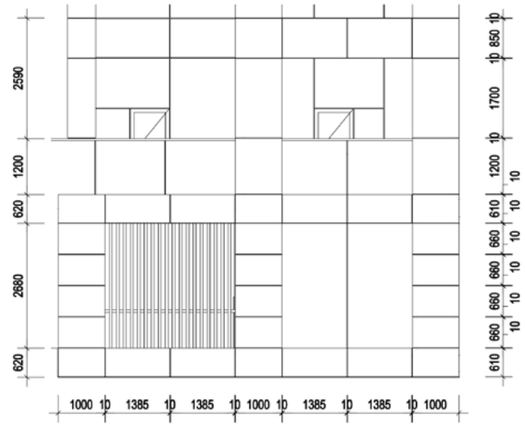


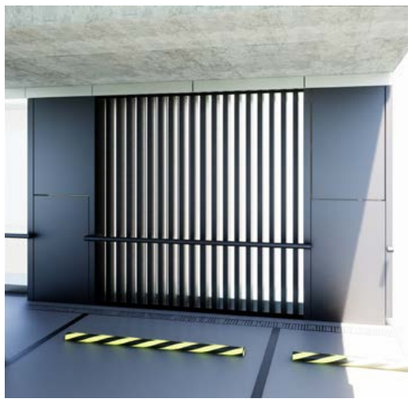




Facade Mockup Drawings and Renders







Thank You !

I would like to extend my sincere appreciation to everyone who has taken the time to review my portfolio. I am grateful for the opportunity to share my passion for architecture with you. Thank you for your time and consideration.

Contact

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